THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS

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ABSTRACT

Title of Dissertation	Thailand Airport Operation Model for the Low-Cost Carriers
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An expansion of low-cost carriers (LCC) has increased the number of air passengers and visitors within a tourism system. This growth has also challenged airports by shaping their operations. This study came forth because of the deficiency of research on the links between Thailand airport operations and low-cost carriers, and the airport operational pattern for such carriers. Thus, the purposes of the study were to 1) study the operational efficiency of Thailand airports from low-cost carriers' perspectives, 2) investigate levels of importance and efficiency in operational attributes and operational procedures of Thailand airports, 3) analyze low-cost carrier passengers' requirements toward Thailand airports' operational attributes, and 4) propose Thailand airport operation model for the low-cost carriers.

A review of literature comprehended the matter of airport operation. Consequently, nine operational procedures and 33 operational attributes were extracted in order to measure operational efficiency of Thai airports.

Mixed research methodology was employed in this study. 423 sets of questionnaires were distributed to collect quantitative data from LCC passengers whereas semi-structured interviews were also conducted to collect qualitative data from 27 LCC passengers, 30 LCC staff, and 7 airport executives in four Thai airports during November to December 2013. Content analysis was used on interview results while descriptive statistics (i.e., frequency, percentage, mean, and standard deviation) and inferential statistics (i.e., paired sample t-test and ANOVA) as

well as Importance-Performance Analysis (IPA) were employed for the analysis of quantitative data.

The research results found that, 1) in low-cost carriers' views, Thailand airports were efficient in providing a number of security check points, security agency cooperation, standard safety equipment, a wide range of ancillary services, friendly staff, and regular meetings with airline representatives. However, capabilities of security staff, airline and passenger facilities, language ability and attitudes of airport staff, service allocation, unequal treatment, price of food & goods, and terminal function designs were areas of inefficiency, 2) safety & security, washrooms, information services, parking facilities, connecting gates, and Wi-Fi showed high importance levels whilst most attributes and procedures were at a 'somewhat efficient' level, 3) LCC passengers required better services on overall areas; especially, internet connections, washrooms, connecting gates, security, information, parking facilities, eating facilities, and ground transport connection, 4) 'Thailand airport operation model for the low-cost carriers' was then proposed with specific requirements on operational procedures with four operational components (i.e., safety & security, facilities & equipment, services & staff, and infrastructure).

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ABBREVIATIONS

Abbreviations	Equivalence
ACI	Airports Council International
AOT	Airports of Thailand Public Company Limited
ASEAN	The Association of Southeast Nations
CEI	Mae Fah Luang Chiang Rai International Airport
CNX	Chiang Mai International Airport
DCA	Department of Civil Aviation, Thailand
DEA	Data Envelopment Analysis
DMK	Don Mueang International Airport
FSC	Full-Service Carrier
HDY	Hat Yai International Airport
HKT	Phuket International Airport
IATA	International Air Transport Association
IPA	Importance-Performance Analysis
LCC	Low-Cost Carrier
LOS	Level of Service
MOT	Ministry of Transport, Thailand
UNWTO	World Tourism Organization

CHAPTER 1

INTRODUCTION

1.1 Introduction

The 1st chapter illustrates the rationale for a study on Thailand airport operation model for the low-cost carriers. Content was initiated with the growth of air transportation and its contribution to tourism. As air transport expands, low-cost carriers demonstrate significant impacts on new modes of traveling, serve middle class passenger markets, and make the tourism system vigorous. Thus, the evolution of global and regional low-cost carriers is also described. In addition, the expansion of low-cost carriers within Thailand—the study area—is explicitly connected to the growth of low-cost carriers in Asia. Undoubtedly, the influence of low-cost carriers is impacts airport capacity and operation. Gaps in research pertaining to airports and low-cost carriers will be highlighted and identified, in order to ignite a new stream of airport studies.

Four research objectives shall be declared. In order to achieve the operation model of Thailand airports for the low-cost carriers, this research needs to cover three study objectives: efficiency, importance, and customers' requirements on airport operations. In relation to each of the three research objective, a set of research questions will be clarified. Additionally, research contributions are directed to both research output and outcomes. The end of this chapter will frame the scope of the study extensively. Scope of content, areas, demographics, and time will be explained.

1.2 Air Transportation and Tourism

Transportation is an inherent part of tourism systems when traveling is required. Transportation can grow vigorously without any touring, whereas touring

cannot succeed without transportation. Transportation has important roles for visitors to embark on their target destinations, to go around attractive places, and to return to their places of origin. To facilitate visitors in reaching tourism places, there are currently three major modes of transportation: land, water, and air (World Tourism Organization, 2010a). Air transportation has shown the fast continuous growth when compared to other surface transportation modes (World Tourism Organization, 2010b).

One of the major beneficiaries of air transport is the tourism industry. In tourism, the aviation industry exerts a significant positive impact on their key areas, supporting employment, providing economic stability and generating prosperity. Approximately, 51% of 983 million global tourists in 2011 and 52% of 1,035 million global tourists in 2012 used air transportation to visit destinations while the remainder travelled over surface, rail, and water (World Tourism Organization, 2012, 2013a). Since the US Airline Deregulation Act in 1978, restrictions on traffic frequencies and price levels have been abolished due to bilateral agreements, open market agreements, and open skies agreements. These major changes did not occur only in the US but also in Europe, Southeast Asia and the Pacific, and around the world (Nilsson, 2009). The number of commercial airlines operated by both governments and private sectors have increased in every region of the world (Doganis, 2001; Honey, & Krantz, 2007; Oum, Yu, & Fu, 2003).

Therefore, both international and domestic air routes have expanded. Changes and growth on air transportation can enhance travel movements of visitors both intra- and inter-countries.

1.3 Low-Cost Carrier Growth

Development in air transportation have enhanced the growth of commercial airlines. Global commercial airlines served 538 million passengers in 2012 with an 8.24% increase from 2011 (IATA Economics, 2013) (Figure 1.1). Commercial airlines are flourishing. Not only full-service carriers (FSC) but also low-cost carriers (LCC), continuously demonstrate positive increments every year.

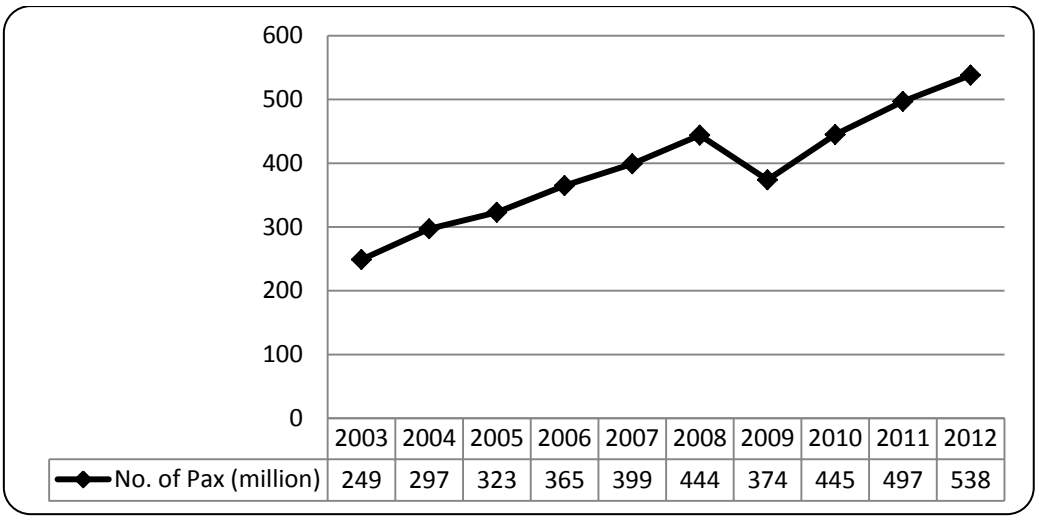


Figure 1.1 Growing Numbers of International Air Passengers
Source: IATA Economics, 2013.

The history of low-cost carriers can be traced to the United States, following the flight revolution which was spearheaded by Southwest Airlines in Dallas, Texas in 1973. With an increase in profits for the LCCs, other competitors joined the race. LCCs are not only influencing the airport design and operations, they are also central to the proliferation of secondary airports and metropolitan multi-airport systems. In addition, they are catalyzing the creation of cheaper airport terminals that differ in size and scope from the traditional designs. Low-cost carriers provide different services from full-service carriers such as lower fares with basic services, point to point routing, online ticketing, and shorter ground time. Distinctive characteristics of the low-cost carrier model provide opportunities for masses of passengers to travel by air and provide choices of travel modes and destinations for tourists. In addition, the growth of the middle income segment has precipitated a switch to air transport for international and domestic travel.

Today, LCCs have grown to become preferred modes of air transport in the United States. Jetblue and SouthWest dominate the low cost-carrier market. They often employ predatory pricing, loyalty programs and congestion at the nation's most popular airports to lessen competitiveness of new entrants. In the UK, the history and growth of LLCs can be traced back to the 1990s, following the launch of low budget pioneers Easyjet and Ryanair.

It is not only within the US and Europe where LCC gained a higher proportion of passenger market share (O'Connell, & Williams, 2005) but also within Asia (GS Global Investment Research, 2010). In Asia, the concept of LCCs can be described as a recent phenomenon. This is because the entry of LCCs into the region is traced back to 1998 following the entry of Air Do and Skymark Airlines in Tokyo-Sapporo and Tokyo-Fukuoka routes respectively (Forsyth, King, & Rodolfo, 2006*)*. More interestingly, market share of the world's domestic FSC flights have been continuously replaced by LCCs (O'Connell, & Williams, 2005).

In Asia, the concept of LCCs can be described as a recent phenomenon. This is because the entry of LCCs into the region is traced back to 1998 following the entry of Air Do and Skymark Airlines in Tokyo-Sapporo and Tokyo-Fukuoka routes respectively (Forsyth et al., 2006*)*. More interestingly, market share of the world's domestic FSC flights have been continuously replaced by LCCs (O'Connell, & Williams, 2005).

1.4 Low-Cost Carriers in Thailand

In Thailand, the first entry of LCC was marked by the entry of low-cost One-Two-Go. In December 2003, One-Two-Go was launched between Bangkok and major cities within a country (AOT, 2011a; O'Connell, & Williams, 2005). In 2004, Thai AirAsia and Nok Air propelled themselves into the low-cost market, displaying the usual growth and rapid development of other LCCs around the world (The Nation, 2004). Today, Air Asia, One-Two-Go and Nok Air are the major LCC players in Thailand, transporting thousands of air travelers to major cities within the country.

From 4.54 million passengers in 2005, LCCs have grown to 28.24 million passengers in 2013. They serve Thailand 6 major airports operated by Airports of Thailand Public Company Limited (AOT, 2012a, 2014c). The six international airports named Suvarnbhumi, Don Mueang, Phuket, Hat Yai, Chiang Mai, and Chiang Rai. The growing rate of LCC passengers in 2013 has grown tremendously by 28.89 percent against the year 2012. In 2013, the LCC market share at 6 major Thai airports was shown at 31.99% (28.24 million of 60.05 million passengers) (AOT, 2014b, 2014c). Also, market share for LCCs, among both international and domestic

passengers, has consecutively increased every year since 2008 to 2013 (AOT, 2010, 2011a, 2012a). Among LCC routes, the proportion of domestic passengers to international passengers generated in 2013 is 63.67 to 36.33. FSC domestic passengers to international passengers had a proportion of 54.38 to 45.62 in the same year. The proportional breakdown for LCCs and FSCs are not much different (AOT, 2014c) (Table 1.1).

Thus, low-cost carriers mainly overshadow domestic flights and domestic passengers in Thailand. To emphasize, LCCs play a significant role in Thailand's domestic air transport. The growing numbers of LCC passengers in Thailand has a direct effect not only on the passengers themselves, or the varieties of routes, but on one of the most significant partners in the industry, called 'Airports'

1.5 Thailand Airports

Besides air carriers, an airport is another key element for air transportation with the simple reason of being an area for landing and taking-off. Supplementing this basic need come passenger terminals, airline offices, and so on. Airports cannot stand alone without air carriers because airports need to serve those carriers as principle targeted customers. Without carriers to serve, an airport operation would be meaningless. Moreover, passengers who are the main customers of the airlines must automatically be airports' customers as well. Still, airport service is necessary to airline service and vice versa. The airports and the aviation industry provide air transport services through a complex interdependency of resources and interactions (Gillen, and Lall, 2004). The role of airports in air transportation cannot be underestimated. Efficient airport operations are crucial to the aviation industry (Barrett, 2004). Airports serve as the main gateway to an economy and serve as the main transport interchanges**.** In addition to the above, airports create employment to the aviation industry. The relationship between air transport and tourism is best examined from the role of airports in regional accessibility and social development.

Table 1.1 Thailand International and Domestic Passenger Statistics on Full-Service Carriers and Low-Cost Carriers in 2008-2013

Passengers (Million) / Year		2008	2009	Δ%	2010	Δ%	2011	Δ%	2012	Δ%	2013	Δ%	6-year Average
International	**FSC**	**30.26**	**30.02**	**-0.79**	**36.49**	**21.55**	**41.59**	**13.98**	**40.13**	**-3.51**	**44.97**	**12.06**	**37.24**
	(%)	(89.21)	(80.85)		(81.42)		(80.98)		(84.14)		(81.42)		**(83.85)**
	LCC	**3.66**	**7.11**	**-76.50**	**8.33**	**17.16**	**9.77**	**17.29**	**7.56**	**-22.62**	**10.26**	**35.71**	**12.22**
	(%)	(10.79)	(19.15)		(18.58)		(19.02)		(15.86)		(18.58)		**(27.50)**
	Total	**33.92**	**37.13**	**22.70**	**44.82**	**20.71**	**51.36**	**14.59**	**47.69**	**-7.15**	**55.23**	**15.81**	**44.42**
	(%)	(100)	(100)		(100)		(100)		(100)		(100)		(100)
Domestic	**FSC**	**12.13**	**13.56**	**-55.19**	**11.77**	**-13.20**	**12.62**	**7.22**	**14.09**	**11.65**	**15.08**	**7.03**	**16.23**
	(%)	(60.60)	(64.24)		(54.63		(50.97)		(49.54)		(46.62)		**(61.18)**
	LCC	**7.89**	**7.55**	**-75.05**	**9.78**	**29.54**	**12.14**	**24.13**	**14.35**	**18.20**	**17.98**	**25.30**	**15.34**
	(%)	(39.40)	(35.76)		(45.37)		(49.03)		(50.46)		(54.38)		**(57.83)**
	Total	**20.02**	**21.11**	**-30.24**	**21.55**	**2.08**	**24.76**	**14.90**	**28.44**	**14.86**	**33.06**	**16.24**	**26.53**
	(%)	(100)	(100)		(100)		(100)		(100)		(100)		(100)
Total	**FSC**	**42.39**	**43.82**	**44.81**	**42.03**	**10.13**	**42.88**	**12.33**	**44.35**	**0.02**	**45.34**	**-16.38**	**46.02**
	(%)	(78.59)	(75.24)		(63.33)		(56.33)		(58.26)		(51.35)		**(69.83)**
	LCC	**11.55**	**14.66**	**-51.55**	**18.11**	**0.24**	**21.91**	**0.21**	**21.91**	**0.00**	**28.24**	**0.29**	**22.52**
	(%)	(21.41)	(25.17)		(27.29)		(28.78)		(28.78)		(31.99)		**(34.16)**
	Total	**53.94**	**58.24**	**92.47**	**66.37**	**0.14**	**76.12**	**0.15**	**76.13**	**0.00**	**88.29**	**0.16**	**65.90**
	(%)	(100)	(100)		(100)		(100)		(100)		(100)		

Source: AOT, 2010, 2011a, 2012a, 2013a, 2014b, 2014c.

Airports play the most vital role in making inbound tourism possible. The spiraling effect of tourism activities can generate substantial income to economies. According to Morrison (2001), for a city to attract and retain corporations with national and global ties, it must have functional and efficient airports. Airports serve as the gateway to a city. Morrison (2001) adds that airport transport would be non-existent without airports. The growth of LCCs has brought about the need to redesign airport operations.

AOT, a public limited company, is the main service provider in airport service with the six international airports previously mentioned. The main functions of the business are to manage, to operate, and to develop any aspects related to these airports. Being Thailand's major airports, these six international airports play truly significant roles for Thai civil aviation, Thai travel & tourism, as well as the growth of LCC. In 2012, 69.83% of 316,304 domestic flights within the country were operated at the six major airports (AOT, 2010; Ministry of Transport, 2013b). The six international airports served 55.23 million international passengers in 2013 which was a 15.81% increase from the previous year (AOT, 2014b). At the six major airports, not only has the number of international passengers grown, but also a number of domestic passengers. The number of domestic passengers at the six airports grew 16.27% in 2013. Besides, 54.38% of domestic passengers are from the LCC flights. Also, the growth rate of LCC domestic passengers reached 25.29% in 2013 (AOT, 2012a).

AOT has applied many programs and projects for its ordinary development plan and for dealing with uncertain circumstances due to both internal and external factors (e.g., Sister Airport Agreement, Airport Service Quality Program, or Airport of Smiles Strategies). However, the concept of Thailand's airport operation in relation to LCC growth has never existed.

1.6 Problem Identification

In Thailand, research on airport operations has been inclusive. Most research literature focuses on measuring airport efficiency, using figures from secondary data. Some researchers utilize numeric inputs and outputs to study airport efficiency and

have compared airport performance among international airports (Adler, & Berechman, 2001; Lin, & Hong, 2006; Mookdawadee Theanthong, 2005; Oum et al., 2003; Yang, 2010; Yeh, & Kuo, 2003). Additionally, a number of researchers have studied customer service satisfaction towards the AOT service at different airports (Chalermphon Kitrungruang, 2011; Paisit Piriyapong, 2011; Sachar Thanasrivanitchai, 1998; Suthon Prakobpetch, 2005; Tana Kanjanasirikul et al., 2007; Thawhan Theanthong, 2006). Most studies based on customer satisfaction had relied on passengers' opinions. Only one study, done by Paisit Piriyapong (2011), has collected data from both passengers and airport staff. However, the primary customers—air carriers were still ignored in this research. Those studies about customer satisfaction on the airport service simply reflect the end output of the operation. Previous research on service had evaluated such factors as passengers' requirements, operational procedures, operational efficiency from the carriers, and airport limitations. However, while these studies describe points of satisfaction or dissatisfaction they did not view the importance of each factor.

Noticeably, the number of LCCs and LCC flights are continuously rising every year (AOT, 2011a, 2012a, 2013a, 2014b). The growth and expansion of LCCs has necessitated the need to reexamine the operation of Thai airports. Further, Thailand does not have specific low-cost terminals like other countries (e.g., USA, Finland, Hungary, France, Italy, China, and Singapore) (Hanaoka, & Saraswati, 2011). Most Thai airports face the challenge in responding to the whole market. Not only the growing numbers of LCCs but also the tendency and requirements of LCC passengers. The rapid growth of LCCs has called for a paradigm shift in airport operations and design. The lack of research literature is also an evident obstacle in assessing the impact of growing LCCs on airport operation and planning. Despite concerted efforts to support the industry and ensure growth, Thailand must redesign the planning and operation of its airports to suit the business model of Low-Cost Carriers.

Consequently, this dissertation seeks to fill the gap by integrating LCC growth with current airport operation and by creating a new model for airport operation. Thus, an upcoming opportunity for Thai airports is how to efficiently operate themselves to properly interact with the low-cost carriers and their passengers. In

order to achieve the research aims, four research objectives are identified in the following section.

1.7 Research Objectives

1) To study the operational efficiency of Thailand airports from low-cost carriers' perspectives

2) To investigate levels of importance and efficiency in operational attributes and operational procedures of Thailand airports

3) To analyze low-cost carrier passengers' requirements toward Thailand airports' operations

4) To propose Thailand airport operation model for the low-cost carriers

1.8 Research Questions

Based on the research objectives, this study will seek to answer the following main and sub research questions**.**

1) How operationally efficient are Thailand airports from low-cost carriers' perspectives?

(1) What operational areas are important for low-cost carriers? (1)

(2) What operational areas could Thailand airports efficiently perform? (2)

(3) What operational areas should Thailand airports improve? (3)

2) What are the levels of importance and efficiency of Thailand airports' operational attributes and operational procedures?

(1) What are the importance levels for Thailand airports' operational attributes and operational procedures? (4)

(2) What significant variables of passengers' socio-demographic profiles show different levels of importance for Thailand airports' operational attributes? (5)

(3) What significant variables of passengers' travel experiences show different levels of importance for Thailand airports' operational attributes? (6)

(4) What are the efficiency levels for Thailand airports' operational attributes and operational procedures? (7)

(5) What significant variables of passengers' socio-demographic profiles show different levels of efficiency for Thailand airports' operational attributes? (8)

(6) What significant variables of passengers' travel experiences show different levels of efficiency for Thailand airports' operational attributes? (9)

3) What requirements do low-cost carrier passengers have for Thailand airports' operations?

(1) What operational attributes of Thailand airports show significant gaps between efficiency levels and importance levels? (10)

(2) What operational procedures of Thailand airports show significant gaps between efficiency levels and importance levels? (11)

4) How should Thailand airports model their operation for the low-cost carriers?

1.9 Research Output

1) Operational efficiencies of Thailand airports from the view of low-cost carriers

2) Levels of importance and efficiency of Thailand airports' operational attributes and operational procedures

3) Requirements of low-cost carrier passengers toward Thailand airports' operations

4) A model for Thailand airports operating with low-cost carriers

1.10 Research Outcomes

1) Thailand airport management can use the results of this study to realize customers' perspectives of how passengers, and the low-cost carriers that they use, interact with airport operational efficiency.

2) Airport authorities: Airport of Thailand Public Company Limited and Department of Civil Aviation can utilize the information obtained from this dissertation as a guideline to manage airports and improve operation, in order to meet the requirements of low-cost carriers and their passengers.

3) Low-cost carriers can use information about passengers' requirements for airports as a guideline to improve their services at airports.

4) This research study will be advantageous for other service organizations in evaluating operational efficiency.

1.11 Scope of the Study

1) Scope of Contents

This study focuses on operation output of Thailand airports, called 'Operational efficiency', in serving airport customers: low-cost carriers and their passengers. The importance and efficiency of airports' operational attributes and operational procedures are evaluated by passengers of low-cost carriers. Also, customer requirements on airports are involved in this study. Finally, acquired data will be analyzed so that an operational model suited for domestic low-cost carriers may be proposed to Thailand airports.

2) Scope of Area

As being emphasized in section 1.5, Thailand airports, and airports administered by Airports of Thailand Public Company Limited (AOT) are areas of interest. Four airports that provide similar services were selected to be the unit of study. The four airports are Phuket International Airport (HKT), Hat Yai International Airport (HDY), Chiang Mai International Airport (CNX), and Mae Fah Luang Chiang Rai International Airport (CEI). The four airports are all situated in major tourist destinations where numbers of visitors are large.

3) Scope of Demography

To propose a proper model for Thailand airport operations, results were gathered from three main personnel groups: Low-cost carrier staff, airport executives and passengers of low-cost carriers. The first two groups of people were used to study airport operational efficiency and passengers' requirements on airports. The last group of participants was invited to evaluate the importance and efficiency of airport operational attributes and airport operational procedures. Requirements of airports were also derived from those passengers.

4) Scope of Time

The study was conducted during August 2012 – July 2014 (two full year period). Time was consumed by research design, data collection, data analysis, and output reporting.

1.12 Definition of Terms

'Airports' refer to authorized airports that provide facilities needed for commercial low-cost carriers and full service carriers in operating their domestic passenger flights and international passenger flights.

'Thailand Airports' relate to four major airports (i.e., Phuket International Airport, Hat Yai International Airport, Chiang Mai International Airport, and Mae Fah Luang Chiang Rai International Airport) that operate services for both domestic low-cost carriers and full-service carriers.

'Airport Operation' is the performance of services and facilities by airport operators—Thailand airports—using existing resources to serve domestic airlines and their passengers. Airport operation covers all related operational attributes and procedures of both arriving and departing domestic passengers.

'Airport Operational Efficiency' represents how efficiently the airport operators can utilize their resources to perform operational attributes and procedures.

'Low-Cost Carriers' (LCC) are low-cost airlines that currently operate domestic passenger flights following the low-cost schemes at Thailand airports. Some examples of low-cost schemes are cost savings, lower fare tickets, basic flight services, short turnaround times, and online reservations. Three low-cost carriers involved in the current research are Thai AirAsia, Nok Air, and Orient Thai Airlines.

'Passengers' refers to both Thai and foreign passengers using low-cost carriers for both domestic arrival and domestic departure at Thailand airports.

'Passengers' Requirements' delineate significant gaps between efficiency scores and importance scores as shown by the evaluation of airport operational attributes. The larger a gap is, the more it will be considered.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

In the study of Thailand airport operation model for low-cost carriers, various concepts, theories, and research were reviewed. First, the overview of airports will be revealed, in order to understand the evolution and significance of airports, especially their relationship with airlines. The definition and related terms of airports will be mentioned in the first part of this chapter. In addition, airport operations will be discussed, to show important elements of airport operational systems and processes. From the literature reviewed in the airport operation section, airports' operational attributes and airports' operational procedures will be derived. Theories related to airport operation (operational theory, management theory, and system theory) are included to support the views of airport operation as well. The third part provides measurement aspects of airport operational efficiency; in which factors affecting airport efficiency and tools measuring efficiency are elaborated. Also, Importance-Performance Analysis (IPA), situational theory/contingency theory, efficiency theory, satisfaction theory, and service quality are detailed in this part.

Next, airport customers, including both low-cost carriers and low-cost carrier passengers, are examined in order to show their roles, specific characteristics, and requirements associated to airports. A decision making theory, psychological theory, consumer behavior theory, and motivation theory are explained in relevance to customers' circumstances. Variables related to airport customers are identified. As the research focuses on a proper Thailand airport operation model, existing information and research on Thailand airports and their operations are examined in the final section of this chapter. Table 2.1 indexes the contents of this chapter.

Table 2.1 Content Structure of the Literature Review Chapter

Sections	Topics and Sub-Topics	Related Theories
2.1 Introduction	-	-
2.2 Overview of Airports	-	-
2.3 Airport Operation	1) Airport Management 2) Airport Operational System (1) Airside and Landside Function (2) Departure and Arrival Procedures 3) Airport Operational Attributes 4) Theories Related to Airport Operation → 5) Related Research on Airport Operation 6) A Summary of Airport Operational Attributes and Operational Procedures (1) Operational Attributes (2) Operational Procedures	(1) Operational Theory (2) Management Theory (3) System Theory
2.4 Measuring Airport Operational Efficiency	1) Airport Operational Efficiency (1) Airport Efficiency & Significance (2) Operational Efficiency of Airports (3) Factors Affecting Airport Operational Efficiency 2) Measuring Operational Efficiency (1) Operational Efficiency Evaluators (2) Tools of Measuring Operational Efficiency 3) Importance-Performance Analysis (1) IPA Development and Advantages (2) IPA Application (3) Related Research on Importance-Performance Analysis 4) Theories Related to Measuring Airport Operational Efficiency → 5) Related Research on Measuring Airport Operational Efficiency	(1) Situational Theory / Contingency Theory (2) Efficiency Theory (3) Satisfaction Theory (4) Service Quality

Table 2.1 (Continued)

Sections	Topics and Sub-Topics	Related Theories
2.5 Airport Customers	1) Low-Cost Carriers (1) Emergence of LCC (2) LCC Characteristic (3) LCC Development in Thailand (4) LCC Requirement on Airport 2) Low-Cost Carrier Passengers (1) LCC Passenger Characteristic (2) LCC Passenger Decision Making Factors (3) LCC Passenger Requirement on Airport 3) Theories Related to Airport Customers → 4) Related Research on Airport Customers	(1) Decision Making Theory (2) Psychological Theory (3) Consumer Behavior Theory (4) Motivation Theory
2.6 Thailand Airports	1) Thailand Airport Operators 2) Air Traffic Statistics of Thailand Airport 3) Thailand Airport Operation 4) Related Research on Thailand Airports	-
2.7 Conclusion	-	-

2.2 Overview of Airports

This section illustrates the development of airports, including the following issues: history, definitions and related terms, significant roles, and relationships with airlines. The sense of airports used in this research is also revealed at the end of this section.

The history of airports dates back to the late 1800s with the first ever professionally functional airport according to NYC Aviation (2012) which was developed in the outskirts of Paris, and dubbed Port Aviation. However, this fact is disputed, since other factions lay claims to being the world's first or oldest airport. For instance according to Prince George's Department of Parks and Recreation (PG Elegant Settings, 2010), College Park Airport in Maryland is the oldest airport that is still functional to this day, having been established in 1909 by Wilbur Wright. Sydney Airport claims that it is the world's oldest functional airport, despite starting its operations in 1920, long after many airports had already been established, but some of which have since ceased to function (Sydney Airport, 2010).

However, the development of airports did not accelerate until the onset of World War I when there was growing demand for airfields and war planes in military bases around the world. One of the earliest military airfields was the Paris – Le Bourget Airport which was commercialized after the war. The same trend was replicated across the world, after World War II. Demand for commercial airlines increased as airports continued to improve due to the boom in business. Airports in the 1960s were built to be more sophisticated and to handle more human traffic for commercial purposes. The design began to take a familiar shape all around the world with terminal buildings on one side that also houses the control tower, while on the other side, there is a runway for landings and take-offs (de Neufville, 1994).

Today airports are quite advanced, unlike the 1960s, when passengers boarded their planes directly on the runway, sometimes traveling to the plane by shuttle bus. This advancement has been effected by the introduction of the aero bridge boarding system that decreased outdoor passenger boarding. Through this system the plane is boarded at a gate where the aero bridge directly connects the inside of the plane with

the passenger waiting lounge. Hence, passengers can easily board the plane once it's at the gate (de Neufville, 1994). Airports have developed through history, undergoing customizations to suit different environments and needs of the aviation industry, in terms of capacity as well as the purposes of the airport. For this reason various terms that are used to describe different forms of airports are discussed subsequently.

The historical development of airports has been coupled with generations of different definitions of the different types of airports. Several terms are used in the Aviation industry regarding the term Airport. There are several interchangeable terms that can be used to refer to 'Airport'. The terms aerodrome, airstrip, and landing fields, may be used to refer to an airport (IATA, 2006). In most instances, an airdrome refers to a facility that has not met certain legal requirements to be labeled as an airport. Hence, not all aerodromes are airports although all airports are aerodromes, in that an aerodrome is inferior to an airport until it has met certain legal protocols (Avionics, 2010).

Terms used to refer to a helicopter landing and departure area are heliport, seaplane base, and STOLport. Heliports are dedicated to helicopters while seaplane base is used for landing and take off by small planes on a water surface. A STOLport, on the other hand, is a Short Take-Off and Landing port that usually has a runway less than 1,500 meters, and is meant for small aircrafts (Avionics, 2010). An airport is a place where aircraft i.e. manmade flying machines such as helicopters and fixed winged airplanes take off and land. An airport usually consists of a runway, a control tower and terminals where passengers board the aircrafts. It also includes mechanisms for loading and offloading passenger baggage onto and from the plane (Avionics, 2010). The next section discusses several roles of airports.

The role of an airport can be effectively elaborated through the various implications that it presents for passengers, in business, tourism, and the public in the form of contributions that airports make to the development of various economic sectors. Foremost, airports play a very central role in the military, evidenced by the development of airports throughout history. In fact, the military played a very central role in the development of airports through World Wars I and II, as discussed in this paper. Essentially, the current military role of airports, of providing air support in

times of battle, has not changed much from the past. However, today technology has developed a mobile airbase at sea known as an aircraft carrier. It is a warship that allows the navy to launch attacks and defend its territories from the air without having to depend on a land based airport (Bennett, 2011). Secondly, airports have made substantial contributions in the hotel industry and the tourism sector. There is consensus in literature that airports are key drivers to tourism (Awiti et al., 2013; O'Connell & Williams, 2005; Olipra, 2012; Ramgulam, Mohamed, & Raghunandan, 2012). An airport, a complicated business, is a crucial element in air transportation that provides complex elements and activities (Ashford, Stanton, & Moore, 1997; Humphreys & Francis, 2002; Manataki, & Zografos, 2010) in facilitating passengers and freight, and being an interchange between air and surface transportation (Albers, Koch, & Ruff, 2005; Doganis, 1992; Yu, 2010).

Olipra (2012) reports that wherever there are low cost carriers there has also been increased travel to tourist destinations. This is regardless of whether the tourist destination is popular or not. In fact, airports that provide access to tourist destinations allow for the development of various sectors of the economy that revolve around the tourism and hotel industries. Other beneficial outcomes of airports and air transportation are creating diverse forms of employment. These are forms of employment and income from related activities such as the supply chain of goods and services and inbound tourism. As a result, jobs are created and revenues generated which ultimately result in economic growth in the regions where airports are based (O'Connell, & Williams, 2005).

Ramgulam et al. (2012) also agree that airports contribute substantially to the development of tourism and regional infrastructure, mainly through providing connections between people. Such linkages ensure that transportation and communication between regions makes it easy for tourists to visit a destination. Moreover, airports play a central role as they are the initial link between visitors and locals, resulting in sustainable, socio-cultural benefits brought about by tourism.

In a study to investigate the effects of airport expansion in rural Kenya, Awiti et al. (2013) found that there are numerous benefits to expanding Kisumu Airport. Sales revenue and sales volume increased for both wholesale and retail

establishments, which was as a result of increased numbers of tourists. There was also increased investment in the region, in the form of financial institutions and business organizations, which ultimately led to the generation of more income in the region.

In general terms, the impact of airports on service businesses is quite marginal. It results in an influx of service based businesses in and around the regions that the airports serve. This is besides opportunities that airports create for personnel who are directly employed in the aviation industry: aircraft controllers, crew members, pilots, baggage handlers, and security staff (Awiti et al., 2013). Fundamentally, airports play a crucial role in social, economic and political spheres as discussed. These roles are made possible through the relationship between airports and airlines. The following section presents an analysis of the connection between airlines and airports.

The relationship between airlines and airports can be understood from the different roles of airports as discussed in the previous section. Definitively, an airline is a company that provides air transport services to passengers and cargo. Such a company is licensed to operate by the government or an aviation authority. There are a variety of airlines ranging from those that operate a single aircraft, such as a small commercial plane or a helicopter, to full service international airlines that operate hundreds or even thousands of aircraft. For this reasons airliners can be categorized into several categories such as international, intercontinental, intra-continental, domestic, or regional. Categorization often depends on the scope of capacity and areas of operation. Some airliners form alliances and mergers with others for mutual benefit. In such an arrangement airliners support their partner's operations in their own territory (Goh, & Uncles, 2002).

The correlation between airlines and airports is based on mutual benefit although it could be argued that airliners gain more from airports, or vice versa depending on the inclination of the argument. Nonetheless, the fact is that airlines cannot do without airports as much as airports cannot operate without airlines. Suffice it to say that airlines depend on airports to provide them with destinations for landing and delivering cargo and passengers. On the other hand, the airports depend on airlines to bring in business from the passengers and cargo that they carry. As such, airlines may own airports in the regions they operate on one hand, while, on the other

hand, an airport can own an airline company. Whatever the case, the relationship between airlines and airports is such that there are benefits to be realized by both entities (Dobruszkes, 2006; Goh, & Uncles, 2002). The relationship between airports and airlines as discussed presents airport management with numerous challenges that require effectively operating the airport. Hence, the following section is dedicated to analyzing airport operation with regard to the mandate that airport management ensure effective and efficient operations of their airport. To conclude, airports have developed for over 200 years. They have served both military and commercial branches, with continuous growth and advanced technology. Besides providing military benefits, airports contribute several global advantages such as tourist movement, economic growth, freight services, and public transport. However in terms of commercial aviation, airports would be meaningless without their crucial partners: commercial airlines. As there are different perspectives and definition of an airport, as previously described, the definition of airport used in this research was derived. 'Airports refer to authorized airports that provide facilities needed for commercial low-cost carriers and full service carriers in operating their domestic passenger flights and international passenger flights. Thus, Thailand airports, in the research, relate to four major airports (i.e., Phuket International Airport, Hat Yai International Airport, Chiang Mai International Airport, and Mae Fah Luang Chiang Rai International Airport) that operate services for both domestic low-cost carriers and full-service carriers.'

2.3 Airport Operation

2.3.1 Airport Management

Airport management focuses on organizing resources and manpower to ensure that passengers and cargo are well served. In essence, airport management incorporates the safety and security of passengers and goods with all factors related to ensuring that the airport environment is comfortable for travelers who are arriving or departing (Gonzalez-Prieto et al., 2011).

Others note that airport management must effectively manage time delays that cargo and passengers experience while awaiting on arrival or departure. In addition, a great extent of airport management's performance is measured by its capacity to ensure non-congestion. To this end, the prerogative of airport management systems is to ensure that passengers and cargo flows smoothly and easily (Zou, & Mandanat, 2012).

Different authors such as Gonzalez-Prieto et al. (2011) and Zou and Mandanat (2012) may differ on specific proprieties that airport management should concern itself. However, it is popular opinion across the board that the management of efficiency and effectiveness reflects customer satisfaction levels, which is directly related to the effective and efficient management of inflows and outflows through the airport (Bilbao, 2014).

Achieving this objective often requires airport management to address all factors that pertain to the effective functioning of the airport. According to Gonzalez-Prieto et al. (2011) management ratings rise when passengers spend the least time possible awaiting transportation in and out of the airport. On the other hand, Zou and Mandanat (2012) highlight that the most crucial element is to ensure that airport management has the latest technology in communication, to make travelers time at the airport worthwhile. For instance, airport management can allow people awaiting their departure to browse the internet through free Wi-Fi technology, provided by the airport's technical support department.

Similar sentiments are shared by Bilbao (2014) who also notes that there are various advantages to management adopting different forms of technology when moving both cargo and people in and out of the airport. Such technological solutions are as varied as their intended purposes. For instance, soothing music that plays in between announcements in the departure lounge is meant for the customer's comfort. On the other hand, technology used to move cargo and passengers' baggage is meant to ease congestion that may result from people moving in small spaces with their baggage at the airports. In addition, baggage transport assists in securing the premises, as all baggage is inspected for any terrorist threats.

To a great extent, the literature advanced on the issue of airport management is focused on ensuring that the airports are secure and that goods and people move through them with ease. Notwithstanding, airport management also incorporates all efforts to ensure that passengers have a comfortable and wonderful experience during the time that they spend within the airport premises, before departure of after arrival (Bilbao, 2014; Gonzalez-Prieto et al., 2011). The subsequent section links operations management of airports with the management of the airport operational systems.

2.3.2 Airport Operational System

As discussed above, airport operational systems are built to essentially manage three fundamental elements: congestion, security, and customer satisfaction. Regarding these three factors, airport management takes measures to ensure that the efforts of its staff and technical solutions all work toward building confidence in the airports' competencies. This is done to secure the property of the airport and to ensure the security of the passengers and cargo. Similarly, the effectiveness of the management is also gauged by how efficiently the airport can handle incoming and outgoing traffic without instances of congestion causing unnecessary delays at the airport. Also, it is important to ensure the comfort of customers such that they have a pleasant experience when they are on the airport's premises (Bilbao, 2014; Gonzalez-Prieto et al., 2011; Zou, & Mandanat, 2012). Airport operations have received greater attention by policy makers (Abrate & Erbetta, 2010; Manataki, & Zografos, 2010; R.-T. Wang, Ho, Feng, & Yang, 2004) as airport operational efficiency has a significant impact on safety, customer satisfaction, airport's financial performance, airlines, and service providers (E. Poh, 2007; Vreedenburgh, 1999).

Poh (2007) and Vreedenburge (1999) frame an airport operational system into five elements including 1) infrastructure (Robinson, 2009), 2) facilities (Ashford et al., 1997), 3) equipment (Ashford et al., 1997), 4) systems, and 5) personnel (Ashford et al., 1997; Robinson, 2009). All five elements have to conjointly provide qualified service to airports' customers. Airport operations must ensure smooth and efficient handling of aircrafts, passengers, and cargo (Frederick, 1961; E. Poh, 2007).

IATA (2006) raised three functional components of airport operations; airside, terminal, and landside. However, most academics and researchers group the operation of airports into two parts; airside and landside, as a terminal mainly functions under the purview of landside operation (Ashford et al., 1997; Manataki, & Zografos, 2010). Thus, airport operation is generally divided into 1) airside function and 2) landside function (Ashford et al., 1997; Doganis, 1992; David Gillen, & Lall, 1997; Oum, Yu, & Fu, 2003; Paisit Piriyapong, 2011; Pels, Nijkamp, & Rietveld, 2001; Young, & Wells, 2011; Yu, 2010). With regard to passengers, airport operations are divided into 1) departure procedures and 2) arrival procedures. As subtopics of airside and landside functions, departure and arrival procedures are displayed in this section of airport operational system, as seen in Figure 2.1.

2.3.2.1 Airside and Landside Function

1) Airside Function

The airside / airborne operation comprises of those activities that alleviate the aircraft's movement or all areas that can access the aircraft (Young, & Wells, 2011). The airside areas include connecting gates (Ashford et al., 1997), baggage loading and unloading areas, runways , taxiways, aprons, ramps, air traffic control services (Ashford et al., 1997; IATA, 2006; Paisit Piriyapong, 2011), and navigation services (Paisit Piriyapong, 2011). In short, the airside of an airport is categorized into airfield and airspace. The airfield component refers to all facilities that the airport used to facilitate aircraft operation whereas the airspace component (off the ground) refers to airspace surrounding an airport where aircraft are monitored and directed prior to landing, after takeoff, or while passing through (Young & Wells, 2011).

Airports have a very small role to play once the passengers or cargo is airborne. However, they have everything to do with the wellbeing of passengers and cargo whether airborne or on land. The role of airport management when a passenger or a cargo plane is airborne is to ensure that the plane navigates correctly and is directed to land safely at the airport. It is usually the function of the control tower on airport premises to ensure that all planes make a safe landing in the airport (Zou, & Mandanat, 2012). On the ground, also referred as landside, there are

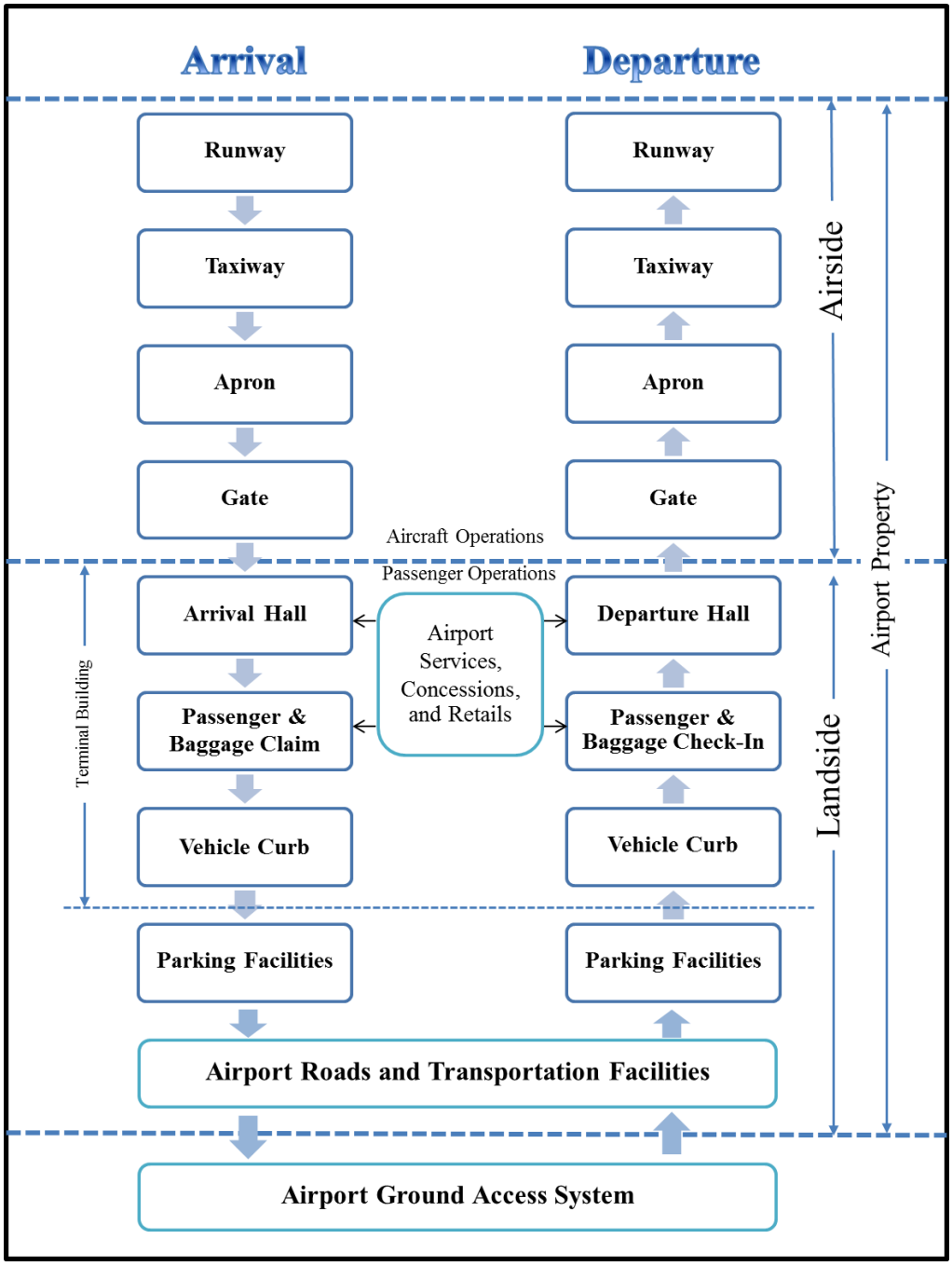


Figure 2.1 Airport Operational System

Source: Adapted from Ashford et al. (1997), IATA (2006), Young and Wells (2011)

various elements that the airport is directly concerned with to ensure the safety of both passengers and cargo.

2) Landside Function

Landside operation, which involves passengers and freight traffic (Oum et al., 2003, p. 286; Yu, 2010), is related to check-in services, as well as commercial services such as currency exchange, restaurants, stores, and car rental. The terminal, a main component of the landside operation, is an interface point between air and ground transportation modes (Ashford, Mumayiz, & Wright, 2011; Young, & Wells, 2011). In order to efficiently operate landside functions, security is a major concern (IATA, 2006) in a parallel with customer satisfaction and congestion.

According to Bilbao (2014), terrorism is a growing concern around the world and has necessitated airport security measures that are stringent, given that airports are the most obvious entry points for terrorists. Further, instances of terrorism where planes have been hijacked are reminiscent major concern in the airline industry; especially after the 9/11 terrorist attack on the United States of America. Since then, and in light of the ever growing terrorism threats all over the world, the management of airport facilities cannot afford to be lax when it comes to matters of security. For this reason, management's priority is to ensure the security of passengers arriving or leaving with their goods and cargo. What is more, the airport's role in ensuring security threats are neutralized at entry points also extends to the security of the nation as a whole, by averting security risks once they are noticed upon arrival at the airport.

Cheng and Liang (2010) present a solution for civil airport safety management based on the effective management of risks. In this system, which is widely used by airports around the world, the airport's security is managed through effective management of records of those who are travelling through the airport as well as the cargo that is being taken through the airport. The system developed is termed the Browser Server system (B/S system). It records all data about travelers and also incorporates a list of those blacklisted by law enforcement authorities not to travel. Airport management ensures that passengers are cleared by the B/S system before they board a plane to depart. Similarly, the B/S system clears individuals who are arriving at the airport as well as their cargo, to ascertain if they were wrongly

cleared from their departure destination; such mistakes are corrected before their entry into the country by initiating deportation procedures (Cheng & Liang, 2010).

Other than safety, airport management has other concerns while the passengers are on the airports premises. Passengers need to be entertained, comfortable and informed. This is achieved through the use of several solutions that take the form of technological improvisations or staff organization. The overall effect is that customers are comfortable while on the airport premises (Gonzalez-Prieto et al., 2011).

2.3.2.2 Departure and Arrival Procedures

This part only concerns itself with domestic procedures, and not international procedures, as the research scheme is only associated with domestic passengers. Passenger procedures for both departure and arrival are discussed.

1) Departure Procedures

IATA (2006) depicts nine steps when processing passengers for departure. The nine steps include arrival at the airport, check-in at the airport, commercial facilities-landside, security screening, government controls, commercial facilities-airside, departure gate, pre-boarding check, and boarding. This researcher, however, has distilled all nine steps into six processes in relation to airport operational systems as previously mentioned. Passengers departing processes and related facilities & services are: 1) arrival at airport, 2) flight check-in, 3) terminal services, 4) security screening, 5) departure hall & gate, and 6) enplaning. Table 2.2 illustrates the six processes.

Departing passengers have to use ground transportation to access the airport. Once passengers arrive, parking facilities and baggage trolleys are often used. Passengers then go to the check-in counters which are often placed parallel or perpendicular to the entrance (IATA, 2006). The passengers can choose to go directly to the waiting area at departure gate or to try a variety of services inside the airport terminal. Both commercial and non-commercial facilities are available in the terminal. Examples of commercial facilities are shops, restaurants, rental services, banks, and exchanges. Non-commercial facilities refer to toilets, seating areas, and free newspapers. Before going to the departure gate, passengers are required to be

Table 2.2 Passenger Departing Processes and Facilities

Departure Processes	Related Facilities & Services
1) Arrival on airport	– Ground transportation – Parking – Baggage trolleys
2) Flight check-in	– Check in counters – Monitors/TV screens – Conveyor belts
3) Terminal services	– Advertising displays – Banking services – Business centers – Car rental counters – Currency exchanges – Water fountains – Flight information displays – Information desks – Lost baggage counters – Newspaper stands – Post office – Public announcements – Restaurants, dining, food outlets – Seating areas – Shops and Retails – Telephone booths – Television watching areas – Toilets – Travel insurance counters
4) Security screening	– Walk-through metal detectors – X-ray equipment – Explosive detection equipment
5) Departure halls & gates	– Shops and Retails – Seating areas – Television watching areas – Newspaper stands – Seating areas – Pre-boarding announcements
6) Enplaning	– Jet bridges – Transfer vehicles

Source: Adapted from IATA (2006)

screened at the security check point. Finally, passengers may walk on the ground from the gate to the airplane, use a transfer vehicle, or use a passenger jet bridge for boarding. Throughout the departing passenger procedures, security is always involved.

2) Arrival Procedures

Similar to departure procedures, this researcher has condensed six steps of arrival passengers into four processes that are relevant to domestic passengers. All six steps raised by IATA (2006) comprise of deplaning, immigration, baggage reclamation, customs, commercial facilities-landside, and surface transportation. The condensed four domestic processes compose of 1) deplaning, 2) baggage reclamation, 3) terminal services, and 4) departing the airport. Table 2.3 displays the 4 processes in greater detail.

Table 2.3 Passenger Arriving Processes and Facilities

Arrival Processes	Related Facilities & Services
1) Deplaning	– Jet bridges – Transfer vehicles
2) Baggage reclamation	– Baggage carousels – Information screens – Baggage trolleys – Toilets
3) Terminal services	– Advertising displays – Banking services – Business centers – Car rental counters – Currency exchange – Water fountains – Flight information displays – Information desks – Lost baggage counters – Post office – Public announcements – Restaurants, dining, food outlets – Seating areas – Shops and Retails – Telephone booths – Toilets – Travel insurance counters
4) Departing an airport	– Ground transportation – Baggage trolleys – Parking

Source: Adapted from IATA (2006)

Once the aircraft has landed and stopped at the airport bay, passengers are allowed to deplane. Passengers may reach the arrival hall in the airport terminal by a jet bridge or by ground vehicles. For some small airports, passengers are allowed to walk on the tarmac, from the airplane to terminal. For international flights, passengers are required to go through immigration processes, to control the entry of incoming people. However, for domestic flights, the immigration process is excluded. Domestic passengers may directly proceed from the terminal to the baggage claim area to load their own baggage.

However, passengers who did not load any belongings can go through the baggage claim area for other terminal services, as some airport facilities and services may still be needed, similarly to departing passengers. Some examples of facilities and services provided for arriving passengers are banking services, shops, restaurants, exchanges, telephone booths, seating areas, and tourist information. Finally, passengers need ground transportation to take them from the airport to their next destination. Car rental counters, shuttle services, or ground transportation are mutually significant

3) Departure and Arrival Protocols

Arrival and departure protocols are such that the management of the airport secures both passengers and cargo movement. The operations involved for both passengers and cargo is to go through security clearance on airport premises. Hence, the fundamental objective of the management is to ensure that all people and goods entering and leaving the airport are cleared of any security concerns (Cheng & Liang, 2010).

Jain and Hailemariam (2010) agree that security measures must be adhered to during arrival or departure at an airport, whether for cargo or for passengers. They note that security can only be ensured by placing several checkpoints where passengers check-in. They add that this must be done before passengers can be allowed to wait for their flight at the departure hall.

They add that after security measures are observed, the next crucial protocol that an airport must observe is to ensure that the transport mechanisms between the plane and the entry point of the airport are flowing

smoothly. An undisturbed flow of ground traffic to and from the plane is essential in preventing congestion at the airport. Therefore, management must be certain that the ground transport to the terminal, for both passengers and cargo, is eased through the use of roller belts for bags and shuttle vehicles where there is no direct boarding mechanism for passengers (de Neufville, 1994; Jain & Hailemariam, 2010)

Similar sentiments are advanced by Chiambaretto (2010), who suggests that arrival procedures should be eased for passengers who have had particularly long flights and who would not appreciate any delays at the entry point of the airport. To achieve this, the management of the airport must focus on minimizing the time that arriving passengers and cargo require to pass security clearance. In the same line, management should also minimize the time that the plane needs to land and taxi to the arrival hall, as well as the time necessary to claim baggage. Similarly, the time it takes from baggage claim to public services should be minimized.

However, this is not to imply that the airport compromises security measures along these points to ease congestion. In fact, airport authorities must adhere to security measures, above all else (Correia, Wirasinghe, & de Barros, 2008a; Horonjeff, McKelvey, Sproule, & Young, 2010; Manataki, & Zografos, 2010; Ryan, & Birks, 2005). Nonetheless, airports need to remain profitable, especially in the case of locally served routes which compete with regional speed trains. In order to remain competitive, airports need to balance speed with security and fast track their clearance and handling procedures for arriving passengers (Chiambaretto, 2010).

2.3.3 Airport Operational Attributes

Airport operations encompass several activities that airport management engages, so that travelers can access several amenities at the airport which make the traveling experience pleasant. As earlier mentioned, management is concerned with customer comfort. While on the airport premises, passengers can ease themselves of the usual anxieties that are associated with the stress of travelling (Gonzalez-Prieto et al., 2011; Vreedenburgh, 1999). A discussion follows, regarding the operational attributes of airport facilities.

Foremost, the literature reviewed here presents the importance of coupling the safety of the passenger with their comfort. Reducing congestion at the airport as another crucial concern for the airport to ensure effective and efficient management of the facility (Bilbao, 2014; Brilha, 2008; Gonzalez-Prieto et al., 2011; Vreedenburgh, 1999).

Research was conducted by Widarsyah (2013) to investigate the impact of airport service quality dimensions on the overall airport experience by travelers; it was discovered that passengers were very appreciative of quality services that made their experiences at the airport memorable. The same study also found that passengers who experienced poor services had bad memories about the airports which created perceptions in their minds about the poor state of services in such airports.

Consequently, passengers with pleasant experiences from quality services all praised the airports and they recounted these in testimonials to others who also appreciated the services and made a point to visit the airports themselves. On the other hand, bad airport experiences resulted in people downplaying the standards of service delivery. As a result, airports with poor services suffered from a bad reputation that lead to ripple effects in repeat business, so that the airports began to decline (Widarsyah, 2013).

According to Widarsyah (2013) passengers' experiences, are based on the service quality received at the airport premises. These include both services received from staff members and airport facilities. In a similar study conducted by Archana and Subha (2012), several attributes that add to the quality of service of the airport include lounges with comfortable seating where visitors can wait for departure (Correia et al., 2008a; Correia, Wirasinghe, & de Barros, 2008b; Horonjeff et al., 2010; Manataki & Zografos, 2010; R.-T. Wang et al., 2004). Such lounges were evaluated positively when they displayed updates on travel information (Correia et al., 2008a; Horonjeff et al., 2010; Yeh,, & Kuo, 2003).

Other attributes mentioned in the report also involve soothing music to relax travelers from the anxieties that are related to the adrenaline rush of travel (Archana, & Subha, 2012). The same sentiments are advanced by Atalik (2009) who agrees that the passengers' perspective of service delivery is the epitome of their experiences in

airports, and is the reason why they make future stops through the airport. Atalik (2009) was centered on encompassing the voice of the customer in interpreting the quality of services that they received.

Archana and Subha (2012) also discovered that passengers also care about how their baggage are handled, particularly when boarding or alighting from the aircraft (Correia et al., 2008a; Horonjeff et al., 2010; Pyrialakou, Karlaftis, & Michaelides, 2012). Passengers particularly mentioned baggage trolleys (Correia et al., 2008a; Yeh, & Kuo, 2003) and belts (Horonjeff et al., 2010; Manataki & Zografos, 2010; Yeh, & Kuo, 2003) as being very helpful in moving their bags from one place to another. Where such facilities were absent, airport services were deemed to be poor.

Easy access when boarding or alighting aircraft is also important, and passengers correlate the use of aerobridges as better service than shuttle buses that ferry them to and from the plane (Brilha, 2008; IATA, 2006). Customers hold the popular opinion that an airport should be served by banks and currency exchange services that allow travelers access to financial services (IATA, 2006; Yeh,, & Kuo, 2003). There should also be adequate ATMs to make withdrawals, regardless of currency differences. Other essential facilities that passengers refer to when gauging the service quality of an airport are the availability of toilets (Correia et al., 2008a; Yeh, & Kuo, 2003), prayer rooms, first aid kits, car rental facilities (Horonjeff et al., 2010; Yeh, & Kuo, 2003) and a post office (IATA, 2006). These are quite essential for different categories of travelers who find the availability of such facilities ease their travelling burdens (Chao, Lin, & Chen, 2013).

In a study by Atalik (2009), passengers noted that they care about the availability of parking space for their vehicles when they arrive at an airport for a departure flight and that they would also want to find their vehicles secure in the parking lot when they come back (Albers et al., 2005; Brilha, 2008; Horonjeff et al., 2010; O'Connell & Williams, 2005; Ryan & Birks, 2005; R.-T. Wang et al., 2004). Likewise, passengers were concerned about the poor state of airports that had dilapidated infrastructure. For instance, the lack of adequate escalators where passengers were forced to use staircases prove quite tasking (Correia et al., 2008a;

Horonjeff et al., 2010). Some airports were found to inadequately label directions which made it quite difficult for passengers to orient themselves (Ryan & Birks, 2005). On this note, passengers noted instances when they approached staff members for help but could not communicate due to the language barrier.

According to Chao et al. (2013), service quality is fundamentally what drives passenger traffic through the airport. They propose that airports should include amenities that passengers require, despite the fact that they are traveling. For this reason, the researchers stress that an airport information desk is paramount in providing passengers with adequate information about their journey and travel arrangements. What is more, passengers require attention, and this must be given by the staff at the airport. To achieve this, management can ensure that staff is ready to assist passengers with any challenge that requires assistance. To this end, the management of an airport should make retail stores and eateries available so that the passengers can revel in last-minute shopping before departure or upon arrival (Brilha, 2008; Correia et al., 2008a; Francis, Fidato, & Humphreys, 2003; Horonjeff et al., 2010; Ryan & Birks, 2005; Yeh, & Kuo, 2003). Such facilities also serve to preoccupy passengers who are waiting for their departure time, or relatives and friends who might be waiting to receive passengers (Chao et al., 2013).

Fodness and Murray (2007) agree with Atalik (2009) on the premise that passengers have expect quality services when visiting airports for the first time and upon subsequent visitations. It is also important for airport management to maintain the standards of quality so they match the expectations of passengers. More importantly, airport management must not compromise services for any reason; the sure way of achieving this is to organize both human and manmade resources to provide customers with a pleasant and memorable experience at the airport (Fodness & Murray, 2007). Bogicevic, Yang, Bilgihan, and Bujisic (2013) note that customer satisfaction is driven by the quality of services offered at the airport. This makes it paramount for the management of the airport to deliver on the promise of quality as well as meet clientele expectations (Bogicevic et al., 2013). The operation of airport systems require managerial skills as well as an understanding of the needs of the aviation industry and the expectations of clientele and industry players (Bogicevic et

al., 2013). The subsequent section presents several theories of airport operation that can assist in the management of operational systems of an airport as discussed herein.

2.3.4 Related Theories to Airport Operation

This section details three theoretical areas that are essential in the management of airport operations. They include; operational theory, management theory, and systems theory. Operational theory is concerned with problem solving techniques, especially decision making (M. C. Gupta & Boyd, 2008). Management theory, on the other hand, is concerned with the relationship between managers and employees in the working environment. It is especially focuses on how mangers handle employees to ensure that tasks are completed (Bobic & Davis 2003; Carson, 2005; M. Stewart, 2010). Systems theory focuses on the interactive contributions of several units in the organization to the general system (Mele, Pels, & Polese, 2010; Patton, & McMahon, 2006). These three theoretical areas will now be discussed in greater detail.

2.3.4.1 Operational Theory

The theory of operations is concerned with how several tasks are organized and how they are completed or should be completed. An operations theory can be documented, or it can be a mental picture of how tasks are completed. Within an organizational framework, operational theory encompasses details on problem solving that is concerned with identifying a problem and developing of solutions to that problem (Wacker, 1998).

M. C. Gupta and Boyd (2008) advance that operations management draws particularly upon the theory of constraints. They add that the theory of constraints is where management strategizes to allocate resources, both staff and finances, to tailor the best approach to coordinate different departments within the firm. This coordination culminates in the achievement of goals and objectives of the organization, guided by principles of service delivery and quality.

The theory, they add, reaches across functional boundaries and helps address pitfalls in decision making. The result is often an improvement in quality, process, inventory, and capacity, among other attributes of the organization's

operations. Essentially, the operation theory concentrates on the manner in which various resources are organized within an organization, to produce an overall effect that encompasses effective management of the firm's operations (M. C. Gupta & Boyd, 2008).

2.3.4.2 Management Theory

Management theory is the collection of different ideas that are used to define the rules and policies that are employed when managing a business enterprise. Theories of management define the relationship between top management and subordinates. On the one hand, management theories gauge the role of an employee's attempts to achieve set goals and targets of the organization. On the other hand, management theories describe the role of top management in motivating employees (Bobic & Davis 2003).

The most precise explanation of management theory is provided by Douglas McGregor's Theory X and Theory Y in the 1960's. The former theory X is concerned with strict supervision while the latter theory Y is more liberal. The benefits of theory X are that management is responsible for keeping operations functional within the firm. As a result, management does not encourage employee participation when making decisions or delegating responsibilities. Theory Y is contrary of theory X and employee participation becomes paramount. Employees are encouraged to participate in making decisions. What is more, theory Y encourages employees to take responsibility by delegating duties and make employees feel like they are central contributors to the success of the company (M. Stewart, 2010).

Whereas theory X is widely seen to be authoritarian and unfriendly to the employee, theory Y comes out as quite liberal; both theories have their benefits as theory X is quite effective in managing large numbers of staff conducting a labor intensive task, such as construction. In contrast, theory Y is suited for the service industry, such as the management of a call center, where the job addresses many differentiated cases which require skilled personnel to effectively address concerns (Carson, 2005).

2.3.4.3 Systems Theory

Systems theory encompasses a wide scope of operational management strategies and techniques that bring together different factions within an organization. It studies institutional systems in general and the contributions that each component makes to the overall well-being of the organization. Systems theory includes self-regulating systems that are found in nature and in global ecosystems which contribute to human learning processes (Mele et al., 2010; Patton, & McMahon, 2006).

According to Mele et al. (2010), systems theory was developed by a biologist by the name L. von Bertalanffy in the 1930s. The theory explains that the world is made up of systems that stem from a problem. System functions are organized to provide solutions to the problem. The theory also advances the system is composed of goals with strategic inputs in the form of investments made toward the achievement of projected output. Lastly, the theory advances that the systems' success is effectively gauged by measuring how well it works, and this can only be done through the feedback received from beneficiary parties to the system.

Pertinent to this discussion, airport management is deemed to be a system where the main problem is the delivery of quality services. Hence, its goals are to deliver services that its clientele accepts and expects. Therefore, airport management makes strategic investments in the form of inputs whose main output is to deliver quality service. In the end, the management of the airport can then measure the standard of quality through feedback that they receive from cargo owners and passengers who employ the services of the airport from time to time (Mele et al., 2010).

Patton and McMahon (2006) add that systems theory is also concerned with aspects of entropy which is the measure of disorder in the system. It also measures how internal and external environment may influence the organization's systems. Likewise, systems theory is also concerned with the boundaries of subsystems and super-systems, and how they affect the overall structure and function of the organization.

More importantly, systems theory hinges upon the benefits and challenges that arise from interdependence between the organization's system and other systems within and without the organization. Generally, systems theory is

concerned with the contributions of several factions or units in the organizational framework that influence its holistic operations (Patton & McMahon, 2006).

2.3.5 Related Research on Airport Operation

It is necessary for airport managers and professionals to implement airport operations in most effective way to increase customer satisfaction and achieve high growth in the airport market. All these airport operations should effectively use advanced technology and analytical tools to get higher returns in terms of customer satisfaction and good experience. In this vein, a number of operation and management research are reviewed and discussed with the perspective of different airport operations including airport management, airport facilities, customer satisfaction, airport logistics, and airport security. Table 2.4 displays the various studies.

'Airport management practices' is a crucial issue in airport operations. Nowadays, airports have been oriented towards multiple services such as service packages, commercial services, logistic facilities, shopping venues, congressional services, and consulting services, to attract tourists and to better serve the end customers' needs. This commercial orientation can be effective to manage airports better by providing multiple services to the customers globally (Geuens, Vantomme, & Brengman, 2004). Traditional air-side business now allow airports to generate high revenues through diversified services and a wide range of products that provide better opportunities for airports to achieve a high market share in the industry. But at the same time, Bonnefoy and Hansman (2004) state that it is a major issue for airport managers to manage and develop the multiple airport systems worldwide. In order to manage multiple airport systems, airports need to adopt a dynamic strategy that can determine the productive investment in secondary airports. Managing multiple airport services in this competitive environment is possible by analyzing the pattern of current and future airline traffic at specific airports (Pacheco, Fernandes, & de Sequeira Santos, 2006).

'Airport facilities' is another theme of airport operations that several studies have focused on (Correia et al., 2008a, 2008b; Geuens et al., 2004; Paternoster, 2008; Torres, Dominguez, Valdes, & Aza, 2005). Correia et al. (2008a) show the significance of effective operational attributes and facilities in gaining competitive

advantage. They state that airlines need to focus on operational attributes and facilities to develop brand identity and to attract customers. Operational attributes and facilities focus on the terminal area as a major interface between the airfield and the rest of the airport including facilities for passenger and cargo handling, baggage claim, airport maintenance, operations, and administration activities. But at the same time, Paternoster (2008) presents a contrary view by depicting that these attributes and facilities cannot be effective without integrating employees with airport operations. Credible branding through operating attributes and facilities can be achieved only by focusing on employees first, because engaged and committed employees provide better services to the customers to improve their satisfaction.

'Customer satisfaction' was addressed by several authors. Yeh and Kuo (2003) state that customer-oriented management practices are effective in improving passenger satisfaction by providing better services relative to other airports, based on customers' perceptions of service attributes. In support of this, Fodness and Murray (2007) give some insights for the measurement and management of service quality at airports to improve customer satisfaction. According to these authors, it is crucial for airlines to assess customer expectations about airport services at individual and competitive levels. Relevant factors are waiting times, differentiation through service quality, appropriate data collection from passengers, fulfillment of service quality as per customers' expectations and identification of key roles of service providers and services in the competitive environment (J.-W. Park, 2007).

After observing passengers and collecting several socio-economic and physical variables, Correia et al. (2008b) also state that it is essential for airports to improve customer experience by measuring overall level of service (LOS) on the basis of various criteria such as waiting time, walking distance, staff attitude and behavior, space availability, variety of retailing facilities, baggage handling, punctuality of flights, and airport security through. At the same time, Paternoster (2008) states that in order to achieve higher levels of customer satisfaction, airports need to show excellent performance exceeding customers' expectations. Airports must avoid various issues related to customer service, price, quality, functionality and

Table 2.4 Related Research on Airport Operation

Authors(Year)	Topic	Research Aims / Highlights	Significant Results	Issue / Theme
Yeh and Kuo (2003)	Evaluating Passenger Services of Asia-Pacific International Airports	This paper highlights a fuzzy multi-attribute decision making approach for evaluating passenger service quality of 14 major Asia-Pacific international airports via surveys.	It is crucial for the international airports to adopt customer-oriented management practices due to the rapid growth of international passenger traffic worldwide by focusing on quality of airport services.	Customer Satisfaction
Geuens et al. (2004)	Developing A Typology of Airport Shoppers	This research highlights better ways to manage airport shopping due to increasing number of travelers' needs and the rising amount of shops and sales at the airport.	The results revealed two traditional shopping motivations namely experiential and functional those are related to the airport infrastructure and atmosphere.	Airport Management Practices& Airport Facilities
Bonnefoy and Hansman (2004)	Emergence and Impact of Secondary Airports in the United States	This study analyzes the factors that facilitated the emergence of secondary airports for better utilization of airport management practices.	The distribution of population at the regional level, the existence and the proximity of a secondary basin of population close to secondary airports were identified as major factors.	Airport Management Practices
Torres et al. (2005)	Passenger Waiting Time in an Airport and Expenditure Carried out in the Commercial Area	This study aims to estimate the relationship between the expenditure in the commercial area of an airport and the passenger waiting time.	Results show that the more time spent in the airport, the greater consumption by passengers.	Airport Logistics& Airport Facilities
Leone and Liu (2005)	The Key Design Parameters of Checked Baggage Security Screening Systems in Airports	The purpose of the research is to identify and evaluate the key design parameters of checked baggage screening and to develop an analytical model that will determine the optimal number of Explosives Detection System (EDS) equipment based on passenger demand levels and security protocols.	The Checked Baggage Screening (CBS) can be used to estimate the total number of EDS required at a particular location and can help planners and analysts to analyze the ability of large number of airports in a fairly rapid and automated manner.	Airport Security
Pacheco et al. (2006)	Management Style and Airport Performance in Brazil	The main purpose of this study is to investigate the impacts of changes in managerial style on airport performance.	Results show that it is essential for the airport systems to adopt perfect managerial style to manage the airport practices effectively to improve operational performance and financial performance.	Airport Management Practices
Fodness and Murray (2007)	Passengers' Expectations of Airport Service Quality	This paper aims to contribute to the development of a conceptual model of service quality in airports by conducting an empirical investigation into passengers' expectations for this service industry.	It is identified that in order to implement airport service quality strategies and tactics to yield the desired results, service quality of airports must be defined by and measured from passengers themselves and not by others.	Customer Satisfaction
J.-W. Park (2007)	Passenger Perceptions of Service Quality: Korean and Australian Case Studies	This paper investigates air passengers' perceptions of 11 factors that may influence their buying behavior namely, in-flight service, reservation-related service, airport service, reliability, employee service, flight availability, perceived price, passenger satisfaction, perceived value, airline image, and overall service quality.	The results reveal that passenger perceptions are significantly different across airlines, seat classes, and usage frequencies.	Customer Satisfaction

Table 2.4 (Continued)

Authors(Year)	Topic	Research Aims / Highlights	Significant Results	Issue / Theme
Paternoster (2008)	Excellent Airport Customer Service Meets Successful Branding Strategy	This research paper aims to analyze various factors, which are significant for the delivery of services in challenging airport environment.	This paper results that in order to achieve higher levels of customer satisfaction; airports should increase airport performance while managing customer expectations regarding service delivery.	Customer Satisfaction & Airport Facilities
Correia et al. (2008b)	Overall Level of Service Measures for Airport Passenger Terminals	This paper highlights overall level of service (LOS) measures for airport passenger terminals.	It is crucial for airports to maintain overall LOS to improve the satisfaction level of passengers considerably.	Customer Satisfaction & Airport Facilities
Correia et al. (2008a)	A Global Index For Level of Service Evaluation at Airport Passenger Terminals	This paper presents a global index for the evaluation of the level of service (LOS) of the operational components at an airport.	The global index is useful in evaluating the overall LOS on a single scale and according to user perceptions.	Customer Satisfaction & Airport Facilities
Norin, Granberg, Yuan, and Varbrand (2012)	Airport Logistics–A Case Study of the Turn-Around Process	This paper studies the effects of different optimization objectives when scheduling de-icing services at Stockholm Arlanda airport.	The results demonstrate that the scheduling in overall airport performance is beneficial to reduce the delay chances at the performance of the de-icing process.	Airport Logistics
Kirschenbaum, Mariani, Gulijk, Rapaport, and Lubasz (2012)	Airports at Risk: The Impact of Information Sources on Security Decisions	This paper discusses about the security decisions in high risk organizations such as airports through effective use of information related to potential threats.	The results show that both formal and informal sources of security information affect employee's decisions to comply with the security rules and directives.	Airport Security
Kirschenbaum (2013)	The Cost of Airport Security: The Passenger Dilemma	This research is based on the determination of the attitude of passengers on the cost of providing security by the airports due to increasing need of training and technology.	It is concluded from this research that it is necessary for the airports to consider the perspectives of passengers behavior, while designing security matrix.	Airport Security
M. G. Stewart and Mueller (2014)	Cost-Benefit Analysis of Airport Security: Are Airports Too Safe?	This paper aims to identify the risks and cost-effectiveness of measures for securing airport terminals and other facilities.	The enhancement of airport security cannot be considered appropriate because there is need to analyze the cost-benefit analysis of security measures to successfully implement them to reduce risk associated with airport security.	Airport Security
Pacheco, Fernandes, and Domingos (2014)	Airport Airside Safety Index	This research paper highlights a fuzzy-logic methodology to measure accident risks at airports due to rapidly growing air traffic and increasingly unstable climatic conditions.	The results show the pilots' perceptions related to the most likely types of accident and the risks such as landing veer-off and crash after takeoff that should be prioritized in airport and airline SMSs.	Airport Security

changing needs. Moreover, better management of airport logistics could generate smoothly flowing procedures for both departures and arrivals.

'Airport logistics' can be effectively managed to reduce delays and waiting times at airports. Torres et al. (2005) suggest that it is necessary for de-icing operators to obtain appropriate and current information related to arrival and departure times to reduce delays and waiting times. In the view of Norin et al. (2012), it is crucial for the airport community to focus on obtaining efficient airport logistics to improve overall airport performance. Handling services at airport include baggage handling, catering, cleaning, fueling, sanitation, water refilling, and de-icing. The logistic services can be optimized by doing sanitation and water re-filling in tandem with baggage loading/unloading and fueling.

Above all, 'airport security' is crucial for all areas of airport operations. Leone and Liu (2005) depict that Transportation Security Administration along with the airport community need to focus on computer models, which can effectively improve security aspects at airports. According to Kirschenbaum et al. (2012), it is effective for airport employees and professionals to make security decisions by using both formal and informal sources of information. Information obtained from informal networks helps to encourage the employees at airports to be more flexible in their security decisions, whereas formal information sources are effective to make them comply with the rules and protocols. On the other hand, Kirschenbaum (2013) states that the protection of airport terminals and associated facilities can increase the financial burden on airports and reduce their operational efficiency due to having negative impact on consumers' attitude. It is necessary for airlines to maintain security standards at airports for maximum customer satisfaction. M. G. Stewart and Mueller (2014) suggest that airport firms need to evaluate cost-benefit analysis for using the security measures on the basis of NPV, benefit-to-cost ratio and break even analysis that would help them effectively utilize security measures.

Therefore, it can be concluded from the reviewed literature that operation and management of airports is important to achieve high levels of customer satisfaction and significantly improve the market position. Previous researchers analyzed different airport operation schemes, but through this section, it is clear that airport operations of any configuration need to be effectively managed with a goal of increasing efficiency.

In the next section, various tools and methods will be discussed to measure airport operational efficiency on the basis of specific parameters.

2.4 Measuring Airport Operational Efficiency

This section includes the techniques and strategies related to the measurement of the operational efficiency of airports. The first sub-section measures airport operational efficiency by depicting what customers think about the operational efficiency, what they perceive, and what they expect at airports in terms of services. It also includes the significance of operational efficiency of airports with relation to passengers and presents examples of some airports and airport authorities of Thailand. The first sub-section also includes the factors which influence the operational efficiency of airports. Airport management needs to understand the factors that enhance the operational efficiency of airports. The second sub-section includes tools to measure operational efficiency, along with evaluations. The third sub-section is beneficial to develop an understanding of the importance-performance analysis framework, which is an effective tool to measure efficiency. The fourth sub-section includes different theories, which are related to measure the operational efficiency of the airports.

The operational efficiency of an airport can be determined by customers. The perspective customers have about airport service efficiency is a major measurement of the operational efficiency of an airport. The following points are effective to measure airport operational efficiency:

2.4.1 Airport Operational Efficiency

2.4.1.1 Airport Efficiency & Significance

Corporatized or privatized airports (Hooper & Hensher, 1997), measure airport performance for the benefit of daily operational management, regulatory bodies, and stakeholders (e.g., passengers, airlines, and government) (Humphreys & Francis, 2002; Oum et al., 2003; R.-T. Wang et al., 2004). The performance of an

airport embodies the quality level of airports in managing resources and providing services at a certain price (ACCC, 2004).

'Efficiency' represents the manner in which the physical inputs of labor, energy, maintenance, materials, capital, and overhead are used to produce the physical service (Hooper, & Hensher, 1997, p. 250). The significance of airport efficiency has increased since the higher movements of passengers and cargo in the globalized world (Adler, & Berechman, 2001). Oum and Yu (2004b) depict that airport efficiency has become a major requirement for airport managers due to growing trends of commercializing and privatizing airports. The managers need to adopt the best practices to provide the best possible service to their customers in an efficient manner.

'Diana (2010) also supports the views of Oum and Yu (2004b) by showing that improving technological efficiency at airports is one of the major requirements for increasing airport efficiency and to increase the number of customers. Further, Diana (2010) explains that the current environment is quite competitive and airports are commercializing and privatizing, which increases the need to improve technology within airports. Because airports are complex organizations their efficiency depends upon the coordination between the different operations such as taxiing, gate departures, and arrivals.

Tsui, Gilbey, and Balli (2013) have a different view than that of Oum and Yu (2004b) and Diana (2010). They explain that airports are the strategic assets for the growth of an economy and due to this it is significant for managers to improve airport efficiency. This will lead to opportunities associated with rapid economic development and increased tourism.

2.4.1.2 Operational Efficiency of Airports

Operational efficiency refers to 'the readiness state of the airport to provide the operational facilities appropriate to the types of airlines and aircraft using the airport' (Ashford et al., 1997, p. 115). As previously described in the section of Airport Operation, the scope of airport operation in this research is mainly focused on landside operation with both departure and arrival procedures in relation to low-cost carriers and its passengers, the efficiency of airport operation refers to 'how efficiently the airport operators can efficiently utilize their resources to perform operational attritbutes and procedures.'

Tsui et al. (2013) determined that operational efficiency of an airport can be measured through the capacity of an airport to serve customers and cargo. The effectiveness of the services to increase customer satisfaction is the major element to determine the operational efficiency of an airport. At the same time, the ability to run a number of flights also shows the effectiveness of operations at an airport. A higher number of flights at an airport shows that the airport's operations are capable of managing air traffic and running operations smoothly. At the same time Lam, Low, and Tang (2009) depict that operational efficiency of airports is a central issue. That is, an airport could achieve operational efficiency by reducing costs and prices and increasing labor and capital productivity.

According to Lam et al. (2009), these aspects increase the operational efficiency of airports. The commercialization and privatization of the airports in Thailand has forced airport to operate more efficiently. The operational efficiency of airports is a major determinant of their effectiveness to serve customers and to accomodate increasing air traffic. The operational efficiency of airports in Thailand also increased as Suvarnabhumi Airport is the main airport of the region, with the capacity to accommodate 45 million passengers and 3 million tons of cargo per year. The airport also has the capability to operate 76 flights in a single hour (AOT, 2011b).

Wu and Caves (2000) also support the views of Lam et al. (2009) by describing that air transport system capacity is an important measure to determine the operational efficiency of airports. In support of this, Wu and Caves (2000) further state that air transport systems ensure the punctuality of flight schedules and efficiency of aircraft turnaround, which reduces operational costs and enhances operational efficiency. At the same time, schedule punctuality enhances passenger services and reduces passenger delays, which also enables the managers to improve the operational efficiency of airports. AOT includes experienced and excellent expertise for operation management, which improves airport development plans and airport improvement. Management can meet the required international standards and improve customer service, which exhibits an improved operational efficiency at Thailand airports (AOT, 2011b).

H. K. Ha, Wan, Yoshida, and Zhang (2013) determine that a competitive market structure in the airport industry increases the competition in the

industry and consequently facilitates a development in the infrastructure to provide effective services to customers. In support of this, the development of Suvarnabhumi Airport in Thailand was an effort to increase the national competitiveness in the world arena. The infrastructure of this airport is quite improved as it is a state-of-the-art international airport, which is equipped with advanced and highly efficient technology and facilities. The infrastructure of the airport meets the international standards of security measures along with the services, which cater to full customer satisfaction (AOT, 2011b). In the future, after upgrading airport service quality, it will be capable of accommodating up to 100 million passengers per year as it aims to be ranked among top international airports. It will increase operational efficiency, competitiveness, and the ability to face the competition from international airports (AOT, 2011b). But at the same time, L. C. Lin and Hong (2006) argue against the above assertions regarding passenger capacity, by depicting that the size of an airport is not correlated with the operational efficiency or performance of that airport.

A. Assaf (2009) affirms the views of L. C. Lin and Hong (2006) by saying that the operational efficiency of an airport cannot be compared to its size. Instead, the difference in technology is an effective measurement of efficiency. Thailand airports include advanced technologies for their ground operations, which increase the flow of information and services to the customers and bring excellence and efficiency to operations. For instance, Suvarnabhumi Airport in Thailand, includes Ground Operational Control Centre (GOCC), which immediately accesses information about gate and position changes so that ground staff can take necessary steps to handle aircraft at the right positions and times. This difference in technology from other airports exhibits the operational efficiency of Suvarnabhumi Airport (UFIS Airport Solutions, 2010). Pyrialakou et al. (2012) identified a highly positive relationship between passenger enplanements, hours of operations and terminal efficiency. It is determined in the research that low-cost carrier traffic has highly seasonal characteristics and significantly influences the efficiency of airports.

Martini, Scotti, and Volta (2013a) are quite different in saying that the operational efficiency of airports could also be measured on the basis of their environmental performance. Noise and air pollution are two main concerns determining the environmental performance and consequently the operational

efficiency of airports. The use of advanced and efficient technology at airports is causing an increase in their efficiency to control noise and air pollution, which increases operational efficiency.

2.4.1.3 Factors Affecting Airport Operational Efficiency

There are several factors, which influence the operational efficiency of Airports. Martini, Manello, and Scotti (2013b) exhibit the impact that fleet mix, ownership structure, and low-cost carriers have on the technical and environmental efficiency of airports. Ingledew (2010) provides a different views from that of Martini et al. (2013b) by illustrating that the ability and expertise of management is an important factor to influence operational efficiency. It is because knowledgeable and skilled people in airport management bring new and innovative ideas and techniques, which improves operational efficiency and consequently the profitability of the regional airports. Katsaros and Psaraki (2011) affirm the views of Ingledew (2010) by depicting that the expertise and skills of people in airport management improved the decision making mechanism and consequently raised the operational efficiency at congested airports.

Brehmer (2011) also shows that airport management determines the operational efficiency of an airport, and that management can be improved from effective leadership. So, people in management have a significant influence on the operational efficiency of the airports. It is because effective leadership facilitates collaborative decision making by integrating units of cargo and individual passengers with the system, which have positive implications for service quality and airport profitability. Butters (2010) provides another perspective, by exhibiting that the infrastructure of airports also have a significant influence on the operational efficiency of the airports. The environment of an airport should flexibly adopt changes in context of master planning, building design, space planning, and components. This flexibility has a significant influence on the operational efficiency of airports. It is because an airport considers these factors that it can be flexible in its environment and mitigate the effects of unforeseen (Butters, 2010)

Vasigh and Haririan (2003b) show that the ownership structure of an airport also has a significant impact over its operational efficiency. In Thailand, the

privatization of the airports is a growing trend, which is causing an increase in their services due to increasing competition in the airport industry. To increase the services for passengers, new technologies are adopted by the airport management, which have brought cost effectiveness and excellence in the services. This is causing an increase in the operational efficiency along with an increase in competitiveness in the international market (DVTEL Incorporation, 2010).

Sabar and Fewings (2010) determine that the cost and revenue structure also influences the operational efficiency of airports as this structure affects the decision making process and consequently the services offered at an airport. In contrast, de Neufville and Belin (2002) exhibit that the facilities at an airport also have a significant influence on operational efficiency. If airports have shared use of facilities, then operational efficiency will rise. Further, de Neufville and Belin (2002) determine that shared facilities serves the various stakeholders at an airport, which increases the use of the available facilities and declines overall cost. Thus, it could be determined that services, structure, facilities, leadership, and people are important factors, which affect the operational efficiency of airports to a great extent.

2.4.2 Measuring Operational Efficiency

2.4.2.1 Operational Efficiency Evaluators

A number of studies measure airport efficiency by focusing on the productive efficiency in relation to existing numerical input factors and outputs figures (Abbott, & Wu, 2002; David Gillen, & Lall, 1997; Hooper, & Hensher, 1997; Koçak, 2011; L. C. Lin, & Hong, 2006; Martin, & Roman, 2001; Oum et al., 2003; Pels et al., 2001; Pestana Barros, & Dieke, 2007; Sarkis, 2000; Yang, 2010; Yoshida, & Fujimoto, 2004). In the words of A. Graham (2005), operational efficiency of an airport can be measured with the help of qualitative and quantitative measures. Revenue, operating expenses, and landing fees are some examples of quantitative measures to determine operational efficiency of an airport as they deal with only statistical and numerical data. In the case of an airport, however, qualitative measures are important sources to assess operational efficiency. Productive efficiency or financial performance are not the sole determinant of overall efficiency of airports or firms (Oum et al., 2003; Robinson, 2009, p. 199).

Tenge (2012) also supports the views of A. Graham (2005) and states that the qualitative measures of customer satisfaction, employee engagement, and process efficiency are some intangible aspects, but provide an important base to measure operational efficiency of an airport. The inclusion of qualitative information is critical to determine effectiveness of an airport's operations. In competitive situations, airport operators must provide faster and more efficient processing for aircraft, passengers, cargo, and baggage (Abrate, & Erbetta, 2010; L. C. Lin, & Hong, 2006; Oum et al., 2003; E. Poh, 2007) to satisfy passengers, airlines (Brilha, 2008; Yang, 2010; Yeh, & Kuo, 2003), and to gain cost efficiency (David Gillen, & Lall, 1997). Three major parties that are concerned with the operational system of airports are passengers, airlines, and airports (Albers et al., 2005; Ashford et al., 1997).

In the words of Sarkis (2000), passengers are the major evaluators to access the operational performance of an airport, as they consume services provided at airports though different operations. Airport's operations are mostly dedicated to improve customers' satisfaction and to induce them for repeat visit. Due to this, the customer is the critical group to measure operational performance of airport. For instance, cleanliness, service time, connecting time, and comfort are factors that reveal the operational effectiveness of an airport, which is difficult to determine without the contribution of customers.

Schall (2003) also supports the views of Sarkis (2000) and states that customer experience with an airport is essential to measure operational efficiency. Waiting time, baggage claim, crowd level, noise level, and flight alternatives influence customers' experience and reveal the operational effectiveness of an airport. For example, an airport that facilitates many alternatives of flights to customers on a real time basis reveals its efficiency to manage different flights and customers. In addition, short waiting time also reveals that an airport has an effective layout and design to deliver airline services (A. Graham, 2005). In this way, it is critical to analyze customer experience and satisfaction to measure operational efficiency of an airport.

According to Epstein and Manzoni (2008), airlines are the other major evaluator to measure operational efficiency of an airport. For instance, the numbers of domestic and international flights, terminal layout which facilitates timely departure,

and reliable systems in transferring baggage are some factors that indicate the management of different airlines' operations in the airports of Thailand. By evaluating the management of different airlines in a Thailand airport, operational efficiency is measured significantly. In addition, the process of delivering services is also essential to measure the operational performance of an airport.

According to the words of A. Graham (2005), operators of the airport are other major evaluators, whose consideration is quite important when measuring the performance of an airport. Skilled operators in an airport effectively manage baggage, people, security, and gate utilization. The performance of airport operators directly influences service delivery of an airport and due to this, it is critical to consider them when measuring operational efficiency of an airport. For example, if a Thailand airport has capable and motivated staff then it may reduce passenger waiting time and baggage handling time. It will help to reduce cost, while improving operational efficiency (Epstein & Manzoni, 2008).

2.4.2.2 Tools of Measuring Operational Efficiency

According to Civil Aviation Authority (2000), surveys, observation, and feedback tools can be used to measure operational effectiveness of an airport. These tools provide an effective way to collect relevant information from employees and customers as the former perform services and later use them. Customer satisfaction is one of the most popular qualitative measures that have been used by several airports to measure efficiency of their operations (Athas Rerkpatima, 2008; Chalermphon Kitrungruang, 2011; Duangjai Jamjang, 2009; Nattaya Prasertsuwan, Nikorn Machai, Surapon Fumongkol, Panthep Wiriyanon, & Chalermwiang Waiwila, 2001; Paisit Piriyapong, 2011; Phanuphong Phong-Ngam, 2010; Sachar Thanasrivanitchai, 1998; Saengarun Saengsuda, 2011; Somkiet Naiwikul, 2008; Suthon Prakobpetch, 2005; Tana Kanjanasirikul et al., 2007). In the words of Vallabhaneni (2013), questionnaires, interviews, and observations are some tools that can be used to obtain information for assessing operational efficiency of an airport. These tools help to collect direct information from different sources regarding the operations.

According to Correia et al. (2008b), a questionnaire is an important tool to measure effectiveness of firms' operations as it enables firms to quickly collect huge amounts of information from both customers and employees. A customer survey

is an example of using a questionnaire to measure operational efficiency. By using this tool, several firms determined different aspects of airport operations that help to measure efficiency in a more accurate manner. Hudson, Hudson, and Miller (2004) also state that a questionnaire provides a way to determine information from customers regarding their experience in the service delivery process. From this, firms interpret the value that their operations create for the customers. In this way, a questionnaire is a significant tool to provide crucial information regarding the operational efficiency of a firm.

Apart from this, Fodness and Murray (2007) state that a questionnaire also measures and presents results of operational effectiveness in quantitative manner. Through the use of a questionnaire, effectiveness of an airport's operational performance can also be demonstrated in graphs, charts, and pictures, making the measurement of operational efficiency more communicable. Due to this, a questionnaire tool can be used to access an airport's operations effectively.

Pekrun and Linnenbrink-Garcia (2014) oppose the views of Fodness and Murray (2007) and state that a questionnaire is an inadequate tool to collect several types of information. Emotions and behavior are some aspects which are difficult to understand with a questionnaire and so it does not provide a clear picture of operational efficiency. The value of customer service is difficult to measure without understanding the emotions and behavior of customers. These aspects play a critical role in shaping their experience during service delivery mechanism. H. Park, Dalsey, Yun, Guan, and Cherry (2011a) also support the views of Pekrun and Linnenbrink-Garcia (2014) by stating that interview tools are important tools in accessing the performance of firms' operations. H. Park et al. (2011a) state that an interview tool provides a way to collect in-depth information regarding operational performance of an organization. This tool facilitates face-to face interaction with customers and employees to help understand emotions and other non-measurable aspects in regard to organizational service.

Andrew, Pedersen, and McEvoy (2011) contradict the views of H. Park et al. (2011a) and state that an interview is a costly tool to measure operational efficiency as it consumes too much time and resources. This tool provides a small amount of information, while consuming more time than a questionnaire. They claim

that this tool is not effective to assess the operational efficiency of a firm quickly. On the other hand, Wilson (2010) states that observation can also be used by firms to evaluate effectiveness of firm's operational performance as it enables firms to perceive actual conditions. In an interview or questionnaire survey, respondents may not always provide reliable information as they can be biased when giving their responses. But in case of observation, respondents' bias does not affect the results of research, as their behavior in service delivery process is analyzed without their knowledge. Hence, observation can be a more effective tool to observe a situation and to measure operational effectiveness of firms in a more accurate manner. As stated by Andrew et al. (2011), observation is a more time and resource consuming tool than both questionnaires or interviews. Additionally, observers' opinions and beliefs may also bias the results of observation. Beside this, it is difficult to validate the data as the observer does not record the events from which he/she interpreted information. Hence, this tool can be less reliable to measure operational efficiency of an airport.

Hence, as mutual advantages of both questionnaire survey and interview are depicted, this research adopted those tools to collect quantitative and qualitative data from related subjects.

2.4.3 Importance-Performance Analysis

The Importance-Performance Analysis (IPA) is one of the main research instruments that have been developed over the years to analyze the concepts of quality and consumer satisfaction in the service industry. IPA is a procedure that shows the relative importance of various attributes and the performance of the firm, product, or destination in providing these attributes. In this research, the operational efficiency of an airport could be determined by evaluating the importance and efficiency of the operational attributes and airport operational procedures. The operational attributes such as parking areas, seats, information desks, information screens, and check-in systems are factors on which airport operation can be evaluated. In this section, IPA development & advantages and its application are reviewed.

2.4.3.1 IPA Development and Advantages

The importance-performance analysis (IPA) framework is effective to measure the importance and performance efficiency of the different attributes and the

operational processes of an airport. It was first proposed in 1977 by Martilla and James for measuring the satisfaction of the clients for a product or service (Silva & Fernandes, 2011; H. Zhang, Q. & Chow, 2004). Martilla and James (1977) firstly proposed IPA in order to develop management strategies of the firm. It was mainly developed to apply to the different areas of service marketing in order to determine customer satisfaction. It has evolved significantly over the years and now, it is applied to almost all product and service areas to determine the significance of that product or service for the customers (Alexandris, 2013).

The development of this IPA framework is effective to determine customer perception about the importance and efficiency of the airport attributes and the operational processes associated (Azzopardi & Nash, 2013). It is because these attributes and processes are directly experienced and observed by customers that their excellence and effectiveness is essential to ensure the operational efficiency of an airport.

Adisasmita (2012) exhibits that the use of IPA framework identifies passenger perceptions about the different attributes of airports, which are related to the services such as waiting rooms, airline counter fronts, check-in, and lobby ads. Thus, the IPA framework can determine the perception of customers and could be developed by including all the attributes that are related to serving passengers. These attributes should be considered the basis of increasing the efficiency and satisfaction of customer services (Adisasmita, 2012).

Jen, Lu, Hsieh, Wu, and Chan (2013) determine that passenger satisfaction is the element that measures operational efficiency of an airport. An airport includes several operational procedures to move passengers from one point to another. So, there is a need to determine the importance of these processes and efficiency of these services for the customers, which can then be used to develop an IPA framework to determine the perception of passengers about the airport servicescape (Jen et al., 2013).

Chu and Choi (2000) determined that the use of IPA framework is quite effective to measure the effectiveness of the services of an organization. The use of this framework is significant for the management to perceive the importance and performance of the organizational services and operations, which is effective to

determine the lacking and to take the further steps to improve them accordingly. Chao et al. (2013) also affirm the views of Chu and Choi (2000) by depicting that service quality and improvements at airports can be determined more effectively through the use of information-performance analysis framework. It is because this framework increases the access to the services on priority basis, which need improvement or must be improved for complaint handling, ground transportation, health center, and so on.

Chao et al. (2013) further state that the IPA framework enables airport management to focus on services and service quality, which are are effective to improve passenger satisfaction and to attract more passengers and more flights from airlines, a major source of revenue for airports. Azzopardi and Nash (2013) determine that IPA enables the researcher to critically analyze the opinions and to summarize the broad views related to strengths and weaknesses of the services and operational processes, which is significant to measure the airport efficiency.

Kale and Karaman (2011) determine that using the IPA framework also enhances the understanding of the knowledge management practices of an organization, which are responsible to create a base of operational efficiency. Thus, this characteristic of IPA framework is important to measure efficiency. Sörensson and Friedrichs (2013) also depict that airports can adopt this framework, as a gap analysis model, as it enables them to identify the gap between the customers' requirements and the airport attributes and operational procedures. Thus, the use of IPA framework is quite beneficial for the airports and could be adopted by management to measure efficiency measurement.

2.4.3.2 IPA Application

The above sections identify the process for developing an IPA framework and its advantages for measuring the efficiency of airports. It is also identified in the above sections that the IPA framework may be used to measure efficiency because it includes two measurement aspects such as attributes and operational services, which evaluate two criteria namely importance and efficiency. B. Gupta (2011) found that in the current business environment, adaptation of competency based approaches is essential for business success and to provide solutions to problems that are related to human resources and other aspects. The

application of IPA framework is effective for the firms to identify the importance and performance of competencies of the organization and to gain competitive advantage.

Fundamentally, IPA framework is interpreted in a grid format, comprised of four quadrants: 1) Concentrate Here, 2) Keep Up the Good Work, 3) Low Priority, and 4) Possible Overkill (Martilla & James, 1977). Figure 2.2 illustrates the relationship of the different grid quadrants.

Quadrant 1: Attributes are perceived to be very important to customers, but the performance levels are fairly low. This suggests that improvement efforts should be concentrated here.

Quadrant 2: Attributes are perceived to be very important to customers, and at the same time, the firm seems to have high levels of performance in these activities. The message here is to keep up the good work.

Quadrant 3: Attributes here are rated as having low importance to customers and are performed badly. Although performance levels may be low in this cell, managers should not be overly concerned, since the attributes in this cell are not perceived to be very important by customers. Limited resources should be expended on this low priority cell.

Quadrant 4: This cell contains attributes of low importance, but where performance is relatively high. Customers are satisfied with the performance of the organization, but managers should consider present efforts on the attributes of this cell as being superfluous / unnecessary and allocate resources elsewhere.

Griffin and Edwards (2012) determine that managers can apply the IPA framework as a diagnostic tool for determining the significance and effectiveness of the airport destination. It is because this framework is quite effective to determine the aspects which are lacking in the performance of services and attributes for the satisfaction of the customers. It enables the managers to implement the appropriate strategies to improve those attributes and services. Tam, Tam, and Lam (2005) say that growing demand of air traffic is also increasing the concern of airport management for their ground services to match passenger expectation. The gap between expected and received services by the passengers is essential to determine in order to improve the performance. So, for this, the IPA framework can be applied to

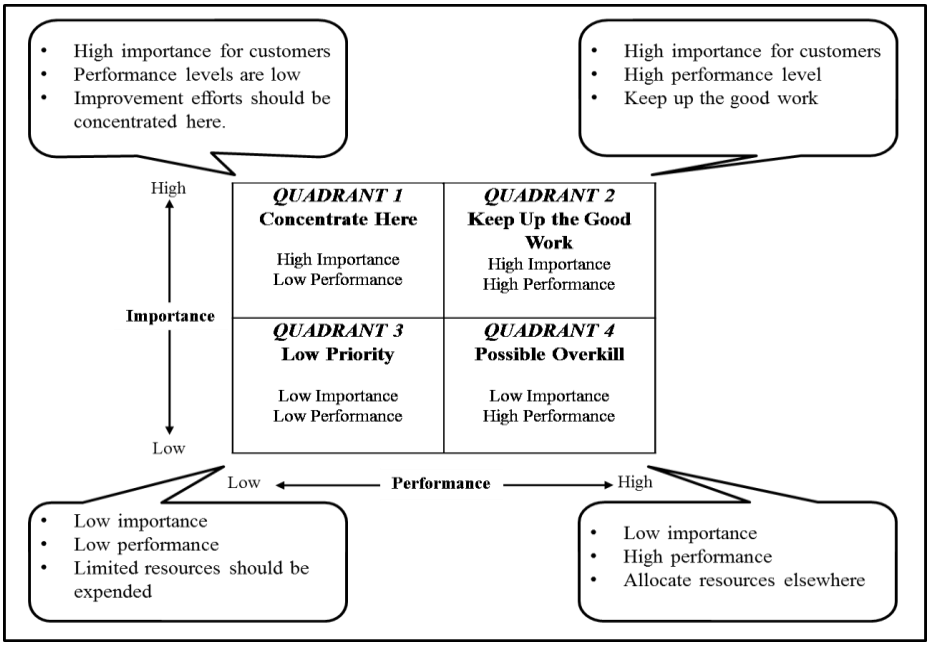


Figure 2.2 Importance-Performance Analysis Grid

Source: Martilla and James, 1977.

the Thailand airports to determine the significance of their operational attributes and procedures.

On the other hand, Widarsyah (2013) determines that airport service dimensions are directly related with attractiveness. Thus, the perception of service quality of the airport is important to determine. The application of IPA framework is quite effective to obtain the perception of passengers regarding these service dimensions. The application of the IPA framework will enable the administrators to identify the important service dimensions and to determine the performance of each dimension.

Mount (2005) describes that the IPA framework can be applied by using different primary tools, which are used to obtain information from the population. This framework helps to obtain quality information about employee and customer satisfaction. Thus, the use of primary data collection methods will help managers to obtain perceptions of the service importance and levels of efficiency, which would enable them to identify the bottlenecks in their services. They could consequently improve the drawbacks, to increase the airport's competitive position. Azzopardi and

Nash (2013) describe the situation quite differently from Mount (2005) by exhibiting that IPA can also be applied to get information from literature review. In this, the IPA is applied in literature review to develop critical understanding and to build a conceptual base related to the selected aspect. It can also obtain views about the attribute importance and factor performances, which will also enable management to understand the lapses in its services and to develop them accordingly.

Thus, the IPA framework should be developed on the basis of an airport's operational services and attributes to determine the importance and efficiency level and to obtain the views of the customers.

2.4.3.3 Related Research on Importance-Performance Analysis

A number of studies employed Importance-Performance Analysis to analyze performance or efficiency in various disciplines such as marketing management, customer preferences, quality management, and customer satisfaction management as described in Table 2.5.

According to many researchers (Abalo, Varela, & Manzano, 2007; Martilla & James, 1977; H. Zhang, Q. & Chow, 2004), importance-performance analysis (IPA) is a cost effective technique, which measures the importance and performance of an attribute of a product or service, in order to analyze operational efficiency and develop effective marketing programs and strategic marketing decisions. Additionally, F.-Y. Chen and Chang (2005), Feng and Jeng (2005) and Lee and Lee (2009) describe in their research that the IPA technique is crucial for the airline service industry to measure the satisfaction levels for service attributes. The industry can address the relative importance of these attributes to customers from different cultures, which in turn, helps in developing better marketing strategies (J. J. Zhang et al., 2011).

Chu and Choi (2000), Adisasmita (2012), and Sheng, Simpson, and Siguaw (2014) identify various selection factors including performance, service level of facilities, quality, value, services, and security in their research by using IPA, which can be helpful for firms to attract customers by improving operational efficiency. Similarly, Kinley, Kim, and Forney (2002) also illustrate the role of IPA to examine the preference of shopping center attributes such as proximity to the airport,

Table 2.5 Related Research on Importance-Performance Analysis

Authors (year)	Topics	Research Aims / Highlights	Significant Results	Research Themes
Martilla and James (1977)	Importance-Performance Analysis	To determine the significance of importance-performance analysis technique in improvement of marketing strategies with the specific example.	Importance-performance analysis offers a number of advantages: – Evaluate consumer acceptance of a marketing program – A low-cost, easily understood technique – Provide better insights to improve the marketing mix – Identify areas consuming too many resources – Help to make strategic marketing decisions	Marketing Management
Chu and Choi (2000)	An Importance-Performance Analysis of Hotel Selection Factors in The Hong Kong Hotel Industry: A Comparison of Business and Leisure Travellers	Using an Importance-Performance Analysis (IPA), this paper aims to examine business and leisure travelers' perceived importance and performance of six hotel selection factors in the Hong Kong hotel industry.	– Concentrate Here quadrant: Value factor – Keep Up the Good Work quadrant: Service Quality, Room and Front Desk and Security – Low Priority: Business Facilities and Food – Possible Overkill quadrant: Recreation – Room and Front Desk and Security are major determining factors for business and leisure travelers, respectively, in their hotel choice selection.	Customer Preferences
Kinley et al. (2002)	Tourist-Destination Shopping Center: An Importance-Performance Analysis of Attributes.	This research aims to determine the preference and choice of attributes at shopping centers by using IPA model.	– Proximity to the airport- Theme tourist shopper – Environment of shopping center- Super off-price center shopper – Location of centers- Super regional centers	Customer Preferences
H. Zhang, Q. and Chow (2004)	Application of Importance-Performance Model in Tour Guides' Performance: Evidence from Mainland Chinese Outbound Visitors in Hong Kong	This study assesses the performance of Hong Kong's tour guides as perceived by mainland Chinese outbound visitors.	Service quality attributes in areas related to professional skills, reliability and language ability- Keep up the good work quadrant The problem-solving ability of Hong Kong's tour guides: The concentrate here quadrant	Marketing Management

Table 2.5 (Continued)

Authors (year)	Topics	Research Aims / Highlights	Significant Results	Research Themes
F.-Y. Chen and Chang (2005)	Examing Airline Service Quality from a Process Perspective	This research examines the gap between passengers' service expectations and actual service received and then applies importance–performance analysis to construct service attribute evaluation maps to identify areas for improvement.	Results reveal that these gaps exist and passengers are more concerned about the responsiveness and assurance dimensions from airline frontline staff.	Marketing Management
Feng and Jeng (2005)	Analyzing Airline Service Improvement Strategy through Importance and Performance Analysis	The main aim of this study is to present an evaluation method by using Importance-Performance Analysis (IPA) to understand airline passengers' degree of care, degree of satisfaction and priority list on some critical service items.	Results show that the proposed IPA method can effectively identify critical airline service items to be improved and assist airline managers in developing airline service improvement strategies.	Marketing Management
Breiter and Milman (2006)	Attendees' Needs and Service Priorities in a Large Convention Center: Application of the Importance–Performance Theory	The purpose of this study is to identify attendees' needs and service priorities when attending an exhibition at a large convention center.	The results of the study show that attendees of an exhibition give priorities to cleanliness, a well-maintained facility, personnel services, convention facility, high quality lodging, sufficient restrooms and phone facility in the convention center.	Quality Management
Abalo et al. (2007)	Importance Values for Importance–Performance Analysis: A Formula for Spreading out Values Derived from Preference Rankings	This research paper aims to identify those attributes of a product or service that are most in need of improvement to produce cost-saving conditions without affecting overall quality.	Results of this study presents a new method for measuring the importance of product or service attributes by using direct importance ratings to choose the most important attributes of the product and to rank them by order of importance.	Marketing Management
Tonge and Moore (2007)	Importance-Satisfaction Analysis for Marin-Park Hinterlands: A Western Australian Case Study	This paper aims to analyze the IPA model with inclusion of satisfaction by focusing on the quality of experience.	If satisfaction exceeds importance, then no management attention is needed. But if satisfaction is lower than importance, then management attention is needed.	Quality Management

Table 2.5 (Continued)

Authors (year)	Topics	Research Aims / Highlights	Significant Results	Research Themes
(Leong, 2008)	An Importance-Performance Analysis to Evaluate Airline Service Quality: The Case Study of a Budget Airline in Asia	This paper presents an importance-performance analysis on a Singapore-based budget airline to identify the customer satisfaction area.	Findings reveal that the management should allocate more resources to make improvements within the areas of checking-in service, in-flight entertainment, price and convenience.	Customer Satisfaction Management
H.-Y. Hu, Lee, Yen, and Tsai (2009)	Using BPNN and DEMATEL to Modify Importance–Performance Analysis Model – A Study of the Computer Industry	This study illustrates using Taiwan industrial computer, working in conjunction with IPA models established with BPNN and DEMATEL to observe its application and effect.	The conventional IPA model has some potential problems related to assumption of linear relationship between importance and satisfaction and mutual independency of quality characteristics as there is need to include BPNN model and DEMATEL to establish the relationship between performance and integral satisfaction for quality characteristic.	Customer Satisfaction Management
Lee and Lee (2009)	Cross-cultural Comparison of the Image of Guam Perceived by Korean and Japanese Leisure Travelers: Importance–Performance Analysis	The purpose of this paper is to evaluate the impact of cultural differences on the perceptions of travelers by using Importance–performance analysis and develop marketing strategies.	The results clearly indicate a contrast between the two national groups in terms of destination evaluations and behavioral patterns.	Marketing Management
Chou, Kim, Kuo, and Ou (2011)	Deploying Effective Service Strategy in the Operations Stage of High-Speed Rail	This paper analyzes the role of a confirmatory passenger continuance behavior model in evaluating high speed rail service quality and performance.	The empirical study concludes that level of access to THSR station and personal space on KTX train are major quality factors, which should be addressed to improve customer satisfaction and corporate profits.	Quality Management
J. J. Zhang et al. (2011)	An Importance-Performance Analysis of Media Activities Associated with WNBA Game Consumption.	The purpose of this study is to examine the importance and relevance of mass media performances associated with WNBA game consumption by using IPA model.	Results of this study show that media performance was considered important and satisfactory by WNBA consumers.	Marketing Management

Table 2.5 (Continued)

Authors (year)	Topics	Research Aims / Highlights	Significant Results	Research Themes
Adisasmita (2012)	Passenger Perception on Airport Terminal Facilities Performance	The study purpose is to analyze the passengers' perception toward the performance, service level and prospect of terminal facilities development at airport terminal building.	The results reveal that there is need to manage the traffic and flight schedules/frequencies and improve the human resources management and manage the entertainment facilities in airport terminal building.	Customer Preferences
Coghlan (2012)	Facilitating Reef Rourism Management through an Innovative Importance-Performance Analysis Method	This study presents a quantitative analysis of visitor satisfaction and its relation to tourism attributes on the Great Barrier Reef, Australia.	It identifies that some factors such as the diversity of the marine life, interactions with other passengers, comfort of the boat, quality of the entertainment, knowledgeable crew, quality of the information and the destination of the trip are major aspects, which generate high tourist satisfaction.	Customer Satisfaction Management
Geng and Chu (2012)	A New Importance–Performance Analysis Approach for Customer Satisfaction Evaluation Supporting PSS Design	This research is carried out to demonstrate the effectiveness of the developed customer satisfaction evaluation approach by using revised IPA model with integration of Kano's model.	New IPA model effectively measures the attributes of customer satisfaction because it considers the fact that the attribute performance and importance are not independent variables and attribute performance has a nonlinear relationship with the overall satisfaction and there is the mutual influence relationship among attributes.	Customer Satisfaction Management
Lopes and Maia (2012)	Applying Importance-Performance Analysis to the Management of Health Care Services	The main aim of this study is to illustrate the considerable potential of IPA in health management in order to enable professionals and managers to identify some of the weaknesses of the health services and management of the Group Health Centers of Feira-Arouca.	The results show that there is need for the health organization to focus on financial accounting and the provisioning service to improve the customer satisfaction.	Quality Management

Table 2.5 (Continued)

Authors (year)	Topics	Research Aims / Highlights	Significant Results	Research Themes
Taplin (2012)	Competitive Importance-Performance Analysis of an Australian Wildlife Park.	This paper explains the significance of Competitive Importance-Performance Analysis (CIPA) to resolve quality issues by applying the scientific principle of a control.	CIPA is applicable to improve the quality of tourism and areas of management or marketing of a product or service.	Taplin (2012)
K.-Y. Chen (2014)	Improving Importance-Performance Analysis: The Role of the Zone of Tolerance and Competitor Performance.	This researches examines a model for evaluating service quality based on the competitive zone of tolerance by benchmarking against competitors, and then constructs an analytical framework referred to as "CZIPA" (Competitive ZOT service quality based IPA) for improving quality attributes to resolve associated issues.	The results demonstrate the feasibility and effectiveness of the determination of priorities of attributes for improvement using CZIPA, enabling hotel managers to achieve a competitive advantage.	Quality Management
Sheng et al. (2014)	U.S. Winter Migrants' Park Community Attributes: An Importance-Performance Analysis	This study examines the role of specific park characteristics in the park selection process and demonstrates the use of IPA to assess how well the parks perform on selected attributes.	Results show that seasonal migrants select location for their winter home on the basis of physical appearance (e.g., cleanliness) and affect (i.e., friendliness and caring management), Wireless Internet, etc.	Customer Preferences

environment, and location. These attributes were applied to shoppers of theme tourism, discount centers, and super regional centers.

Breiter and Milman (2006) and K.-Y. Chen (2014) regarded quality management in convention centers and hotels by using the IPA model. They state that by using a competitive IPA model, firms can effectively focus on quality priorities related to services. They can influence customers and achieve competitive advantage in the market through improving their operational efficiency. Tonge and Moore (2007), Taplin (2012), and Lopes and Maia (2012) explain the significance of the IPA model in tourism management and health service management by stating that the IPA model can be used by quality managers in tourism facilities and health services to improve customer experience with the services. In contrast to this, Chou et al. (2011) describe the importance of a confirmatory passenger continuance behavior model to appraise high speed rail service quality and performance.

Leong (2008), Geng and Chu (2012) and Coghlan (2012) reveal that IPA can be used as an effective tool by firms to understand passengers and tourists. Their satisfaction levels can rise significantly if the firms focus on any perceived discrepancy in service quality. In support of this, H.-Y. Hu et al. (2009) states that a modified IPA technique along with the back-propagation neural network (BPNN) and the decision making trial and evaluation laboratory (DEMATEL) are better tools than the conventional IPA for customer satisfaction management. They help to determine how customers perceive quality by accurately analyzing the importance and priorities for improvement in operational efficiency.

It can be concluded that the IPA model is effective for the managers to improve operational efficiency in airports. Previous studies were related to operational efficiency, but there was gap between required information and existing data that can be fulfilled by focusing on the IPA model. The discussion on the significance of the IPA model in improving operational efficiency of airports will be helpful to make the research more effective and meaningful.

2.4.4 Related Theories to Measuring Airport Operational Efficiency

Airport operational efficiency is related to customer experience and satisfaction. Due to this, there are several theories which can be used to measure the

operational efficiency of airport. At the same time, operational efficiency can also be judged through services which are measured through the theories associated with service quality. To measure the operational efficiency of an airport several theories can be used: situational theory, contingency theory, efficiency theory, satisfaction theory, and service quality theory. An analysis of the associated theories follows.

2.4.4.1 Situational Theory

The situational theory was developed by Paul Hersey and Kenneth H. Blanchard in 1972 when they revisited the article *Life-Cycle Theory of Leadership,* written in 1969. This theory explains how much direction and socio-emotional support is required from a leader in any given situation (Weinstein, 1996). It integrates the task and relationship behavior of leaders to measure their efficiency for a particular aspect. This theory exhibits how a leader behaves in a particular situation (Howell, 2012).

The operational efficiency of an airport depends on the people who manage the airport. Thus, different leadership styles could be used to measure the airport's operational efficiency. This is because leaders play an important role in managing the services and operations of an airport. Brehmer (2011) determines that the leadership of owners is an effective aspect for airport operations management. It is because owners/leaders take appropriate actions as per the situation to manage airport services. Situational leadership can be used to measure operational efficiency as it determines the effectiveness of leaders to make decisions in different situations, which can enhance their ability to improve operational efficiency (Peus, Braun, & Frey, 2013).

Thompson and Vecchio (2009) determine that situational theory enables managers and leaders to improve their decision making and consequently their ability to utilize resources optimally. At the same time, the situational theory also enables managers to motivate their employees to perform more effectively, by motivating them differently in different situations, which improves airport services and consequently airport operational efficiency. Ross and Waters (2013) also demonstrate that situational theory is effective to facilitate learning in the organization, which increases the quality of services. Thus, situational theory can be used to measure the learning at airports and consequently the operational efficiency.

The use of situational leadership theory is useful to measure operational efficiency. It is because this theory would determine the ability of airport managers to face different types of customer perceptions and to make decisions accordingly to satisfy them. This will enable them to know the significance of operations at airports.

2.4.4.2 Contingency Theory

Similar to the situational theory, contingency theory can also be used to measure the operational efficiency of airports. The history of contingency theory is quite long as it originated 100 years ago. In 1950, Ohio State University surveyed the leaders in different organizational contexts to determine a range of possible leader behaviors. Contingency theory was further developed in 1960, when Fred Fielder advanced the contingency approach (Miner, 2002). It was a milestone in the development of the contingency theory of leadership, which is used to determine the efficiency of leaders and managers in undesirable situations. This theory was mainly developed to determine particular behaviors of leaders in particular organizational contexts (Hamilton, 2013).

Sims, Faraj, and Yun (2009) show that contingency theory determines the effectiveness of group decision making. The use of contingency theory can be effective to measure the operational efficiency at airports, where management teams are comprised of several people working together. If a leader uses the contingency theory then he/she will perform more effectively in stressful situations. Sims et al. (2009) also depict further that contingency theory enables leaders and managers to motivate employees more effectively to address complex situations.

Ganescu (2012) elucidates on how the contingency theory effectively measures the performance of an organization in social and customer contexts. This model can be used by firms to develop a relationship between performance and development, which can also be used at airports. According to Ganescu (2012), contingency theory manages internal and external constraints optimally. It could effectively measure the efficiency of airports by determining the ability of people to manage internal and external constraints.

2.4.4.3 Efficiency Theory

The concept of efficiency is central to finance. It is because the term, efficiency, is used to describe the market in which the price of the financial assets is

measured. This concept first originated in the dissertation submitted at the start of the 19th century by Bachelier in 1900 (Dimson, & Mussavian, 2000; Gall, 2007). This work led the development of efficiency market hypothesis framework, which is now widely used to measure the efficiency of firms in the market, in terms of value of their financial assets (Palan, 2007). But, continuous evolution of the concept caused its application to become relevant in other sectors which determine the efficiency of products and services with respect to customer satisfaction.

In order to measure airport operational efficiency, efficiency theory can also be used. It is because efficiency theory allows managers to determine the level of efficiency at airports and can also enable them to know any gaps in current operation management practices. Data envelopment analysis (DEA) is a new efficiency theory, which is used by management to determine the efficiency of decision making (Sengupta, 1998). The evaluation of decision making could lead to management using resources and providing services to passengers while reducing overall costs.

DEA was developed as a new management science tool to measure the technical efficiency of public sector decision making units. This method includes an alternative principle to extract information after observing a population, which determines the management and scientific efficiency of that particular aspect. It also judges management's ability to make decisions for the business (Charnes, 1994).

Martini et al. (2013b) also exhibit that the efficiency assessment of airports is effective. Martini et al. (2013a) described a hyperbolic-stochastic approach for assessing the efficiency of airports. In the research, it is determined that the measurement of airport pollution efficiency is a major aspect of assessing the effectiveness of airport management, and consequently the operational efficiency. It is because the impact that aviation has on the environment is growing continuously and it is necessary for the airport management to manage this issue due to growing environmental concerns.

Ahn and Min (2013) also support the view of Sengupta (1998) by demonstrating that the DEA efficiency model is quite effective to measure the operational efficiency of airports. Multi-period operational efficiency of airports can also be determined with the analysis of a variety of services offered by the airport such as passenger transfer, re-fuelling, parking, and shipping. Ahn and Min (2013)

also use the Malmquist productivity index theory to evaluate the efficiency of the operational performance of the airports. The use of this index permits the airport authority to determine the key drivers for enhancing operational efficiency and subsequent competitiveness. Thus, these efficiency models and theories also measure airport operational efficiency.

2.4.4.4 Satisfaction Theory

Satisfaction theory is directly related to the motivation of the people. It is because the satisfaction of motives enables them to increase their satisfaction for performing a particular task effectively and in a desired manner. Motivation theories were first realized in late 1880s, when the organizational studies were developed for the question related to the improvement in the organizational effectiveness (Mills, Bratton, & Forshaw, 2006). After this, the consideration over how to increase employee satisfaction increased gradually, which caused the development of different motivational theories, over time. The major concept of motivational theories is that it is essential for an organizations to identify the motives of employees to perform a particular task and to fulfill these motives in order to satisfy them with their job (Miner, 2008). An increase in their satisfaction would be effective to improve their morale and their efforts to complete their assigned roles and responsibilities.

The operational efficiency of airports is directly associated with customer satisfaction. In this way, satisfaction theory could also be used to measure operational efficiency. Satisfaction theory could determine the extent of customer satisfaction and consequently the operational efficiency of airports. It is because different attributes and operational procedures are implemented at airports to satisfy passengers (Teperi, & Leppänen, 2011). Thus, the satisfaction theory can be used to measure the operational efficiency of airports.

There are different types of satisfaction theories such as motivational, leadership, and customer satisfaction theories. Different motivational and leadership theories would be effective to determine the level of influence managers have on their employees and consequently on the operational procedures. Patwardhan, Yang, and Patwardhan (2011) determine that a person in management has some priorities and can focus on one aspect more than other aspects. Thus, the work of that person can

make him or her satisfied and can improve his/her performance, which is effective to improve the operational efficiency at the organization.

Räikkönen and Honkanen (2013) also depict that the satisfaction of passengers increases their experience. At the same time, customer satisfaction can only be obtained by organizations with value-added or excellent services. So, concerning measurement of an airport's operational efficiency, satisfaction theories would be effective to measure the success of the firm to provide good experiences to passengers along with facilitating satisfaction for them. Räikkönen and Honkanen (2013) further state that higher levels of satisfaction from different organizational attributes would be effective in measuring operational efficiency.

At the same time, airports have several attributes and the services which contribute significantly to improving customer satisfaction. Thus, questions related to satisfaction of different operational procedures and attributes would effectively obtain the extent of operational efficiency of airports, which increases the relationship of satisfaction theory with measuring the operational efficiency of Airports in Thailand.

2.4.4.5 Service Quality

Service quality is a major aspect, to effectively measure operational efficiency, as higher service quality exhibits higher operational efficiency. Brissimis and Zervopoulos (2012) determine that customer oriented organizations can be assessed by analyzing the service quality of its different attributes. It is because these different attributes are effective in facilitating quality service for customers. So, service quality of different operational procedures and attributes of an airport can also be assessed to determine the extent they add value for passengers and increase their satisfaction.

Gok and Sezen (2013) studied healthcare services and found that service efficiency and service quality are related to each other. Both have a significant influence on the satisfaction of consumers. Airports also include services by providing safety, security, and convenient facilities to make passenger travel more enjoyable. Thus, operational efficiency can be measured through the quality of those services.

At the same time, the passengers may have different perceptions of the service quality of airports due to differences in their needs and desires. This makes it

difficult to analyze the actual significance of operational efficiency of the airports. Y. C. Hu (2009) mentions that service quality theory can be used to evaluate operational efficiency when including multiple criteria of decision making. The use of these multiple decision making criteria would be effective to determine which are critical to service quality and to determine the operational efficiency of airport. Multiple criteria would allow passengers to express their views about the exact level of importance and efficiency of the services at airport. Li (2013) states that Likert scales include multiple criteria in decision making, which can be used with service quality theory to measure the operational efficiency. Likert scales include different criteria, so users can give their perception and thoughts about a particular service aspect accurately.

The link of service quality with a Likert scale would measure the performance level and efficiency level of services attributes at the airport. The Likert scale will include different levels on which passengers can determine the importance such as strongly important, important, somewhat important, somewhat unimportant, unimportant, and strongly unimportant. It would be effective for passengers to give exact views about the importance of service quality as per their perception (Hartley, 2013). It would provide more criteria on which service quality can be judged, to effectively determine operational efficiency (Friborg, Martinussen, & Rosenvinge, 2006). At the same time, service quality would also determine the level of efficiency by using the aspects of a Likert scale. It would enhance the researcher's understanding of customer perceptions toward the efficiency of the services at airports.

2.4.5 Related Research on Measuring Airport Operational Efficiency

In today's competitive business environment, it is essential for the airport managers to maintain and measure operational efficiencies to provide better quality services to travelers and customers. Measuring operational efficiency helps managers to identify the airport's competitive position in local and international markets. This section discusses related research on measuring airport operational efficiencies with the help of different themes such as airport competitiveness, productive performance, operational efficiency, and quality services (Table 2.6).

Various researchers (Y. Park, 2003; Scotti, Malighetti, Martini, & Volta, 2012; Yu, 2010) focused on related issues gaining *airport competitiveness*. In the views of

Y. Park (2003), airport competitiveness helps managers measure the efficiency of airports effectively. Demand, layout, facilities, and management define the competitiveness of airports. Scotti et al. (2012) and Yu (2010) state that public airports are more competitive than the private airports due to technical efficiency, which improves facilities and services. It also increases in their competitiveness with other national and local airports in the country.

Many authors (Abbott & Wu, 2002; Adler & Berechman, 2001; Diana, 2010; David Gillen, & Lall, 1997; H.-K. Ha, Yoshida, & Zhang, 2011; He, Zhang, & Wang, 2010; Hooper, & Hensher, 1997; Humphreys, & Francis, 2002; Lam et al., 2009; L. C. Lin & Hong, 2006; Mookdawadee Theanthong, 2005; Nyshadham, & Rao, 2000; Oum & Yu, 2004a; Oum et al., 2003; Pestana Barros, & Dieke, 2007; Pyrialakou et al., 2012; Sarkis, 2000; Widener, 2010; Yang, 2010; Yu, 2010)focus upon the various airport characteristics such as input and output factors, which contribute to measuring airport efficiency in the world market. Most of them emphasized *productive performance* studies, whereas some accentuated operation and service schemes.

In the research of Hooper and Hensher (1997) and David Gillen and Lall (1997), it was found that normal financial reporting was not enough for airports to measure performance because profitability is only an exercise of market power rather than a sign of productive efficiency. In this, privatization and corporatization help airports to measure their performance. For this, airport authorities need to develop appropriate service and productivity indicators to measure performance, in order to achieve efficiency in operations. Terminal efficiency can be achieved through expanding the number of gates and managing them effectively. On the other hand, Humphreys and Francis (2002) stress that performance measurement is important for airport managers to manage day-to-day business and operational management.

Oum et al. (2003) reveal that economies of scale help airports to achieve higher productivity in the country, which improves operational efficiency. They also identified that ownership structure of an airport does not create any statistical significance on productivity. On the other hand, many authors (Chang & Cheng, 2003; L. C. Lin & Hong, 2006; Rodriguez & Bijotat, 2003) focus on performance measurement aspects such as supply, airline demand, passenger demand,

Table 2.6 Research Related to Measuring Airport Operational Efficiency

Authors (Year)	Topic	Unit of Analysis	Research Focus	Data Sources & Methods	Theme
Hooper and Hensher (1997)	Measuring Total Factor Productivity of Airports – An Index Number Approach	6 Australian airports (1989-1991)	Total factor productivity (1) Cost-efficiency (2) Cost-effectiveness (3) Service-effectiveness	Non-parametric index number method Regression model	Productive performance
David Gillen and Lall (1997)	Developing Measures of Airport Productivity and Performance: An Application of Data Envelopment Analysis	21 airports of USA (1989-1993)	Financial results and economic productivity of airlines (1) Airside efficiency (2) Terminal efficiency	Data Envelopment Analysis (DEA) Tobit Regression	Productive performance
Nyshadham and Rao (2000)	Assessing Efficiency of European Airports : A Total Factor Productivity Approach	25 airports of Europe	Alternative approaches to access the efficiency of airports	Partial Productivity Total Factor Productivity (TFP) Data Envelopment Analysis (DEA)	Operational efficiency
Sarkis (2000)	An Analysis of the Operational Efficiency of Major Airports in the United States	44 US airports	Overall operational efficiency (1) Operational costs (2) Number of airport employees (3) Gates (4) Runways	Data Envelopment Analysis (DEA)	Operational efficiency
Adler and Berechman (2001)	Measuring Airport Quality From the Airlines' Viewpoint: An Application of Data Envelopment Analysis	26 airports of Western Europe, North America and the Far East	Determine the relevant efficiency and quality of airports	Data Envelopment Analysis (DEA) Questionnaire survey	Quality services
Abbott and Wu (2002)	Total Factor Productivity and Efficiency of Australian Airports	12 Austrian Airports	Efficiency and productivity of Austrian Airports in terms of growth in technological changes	Malmquist total factor productivity Data envelopment analysis	Productive performance
Humphreys and Francis (2002)	Performance Measurement: A Review of Airports	European, US and Paris Airports	Changing nature of the performance measurement of airports.	Data Envelopment Analysis (DEA) Total Factor Productivity (TFP)	Productive performance
Chang and Cheng (2003)	Performance Evaluation of International Airports in the Region of East Asia	10 International Airports of East Asia	Performance evaluation in airport operations with four aspects such as supply, airline demand, passenger demand, and management side.	TOPSIS decision approach Fuzzy Synthetic decision approach	Productive performance

Table 2.6 (Continued)

Authors (Year)	Topic	Unit of Analysis	Research Focus	Data Sources & Methods	Theme
Oum et al. (2003)	A Comparative Analysis of Productivity Performance of The World's Major Airports: Summary Report of the ATRS Global Airport Benchmarking Research Report	50 major airports in Asia Pacific, Europe and North America	Overall productive efficiency by computing gross total factor productivity	Regression Analysis	Productive performance
Y. Park (2003)	An Analysis for The Competitive Strength of Asian Major Airports	6 East Asia region airports (Korea, China, Japan, Taiwan, Singapore, and Malaysia)	Competitive status of airports based on five factors: service, demand, managerial, facility, and spatial qualities	Multi-decision criteria approach Comparison of Qualitative data.	Airport competitiveness
Rodriguez and Bijotat (2003)	Performance Measurement, Strategic Planning, and Performance-Based Budgeting in Illinois Local and Regional Public Airports	21 professionally managed public airports	Determining the extent of airport facilities (1) Performance measures (2) Strategic planning (3) Relationship between performance measures and strategic planning	Questionnaire survey	Productive performance
Yeh and Kuo (2003)	Evaluating Passenger Services of Asia-Pacific International Airports	14 major Asia-Pacific international airports	Evaluating passenger service quality with five attributes: comfort, processing time, convenience, courtesy of staff, information visibility, and security.	Questionnaire survey	Quality services
Oum and Yu (2004b)	Measuring Airports'Operating Efficiency: A Summary of the 2003 ATRS Global Airport Benchmarking Report	ATRS Benchmarking report	Measure and compare the performance of aspects of airport management and operations: productivity and efficiency, unit costs and cost competitiveness, financial results	Variable Factor Productivity (VFP)	Operational efficiency
R.-T. Wang et al. (2004)	A Comparative Analysis of The Operational Performance of Taiwan's Major Airports	10 Airports in Taiwan (2001)	Overall operational performance (based on relationship between airports, passengers, airline companies, and fire services)	Grey Relation analysis TOPSIS method	Operational efficiency

Table 2.6 (Continued)

Authors (Year)	Topic	Unit of Analysis	Research Focus	Data Sources & Methods	Theme
Mookdawadee Theanthong (2005)	Coparative Analysis on Efficiency between Airports Authority of Thailand and Foreign Airports Company	7 airport corporations (Thailand, Singapore, Malaysia, Hong Kong, England, Spain, and Netherlands) (Secondary data in 2000-2005)	Airport efficiency Profits, revenue, operating cost, number of passengers, asset turnover, profit margin, return on asset, common stock	Data Envelopment Analysis (DEA)	Productive performance
L. C. Lin and Hong (2006)	Operational Performance Evaluation of International Major Airports: An Application of Data Envelopment Analysis.	20 major airports around the world	Overall operational performance (1) Existence of hub airports (2) Economic growth	Efficiency value analysis Slack variable analysis Sensitivity analysis Analysis of variable weight	Productive performance
Andreatta, Brunetta, and Righi (2007)	Evaluating Terminal Management Performances Using SLAM: The Case of Athens International Airport	Athens International Airport	Terminal management performance (1) Historical scenario (2) Foreseeable scenario (3) Traffic intense scenario	Simple Landside Aggregate Model (SLAM)	Productive performance
Pestana Barros and Dieke (2007)	Performance Evaluation of Italian Airports: A Data Envelopment Analysis	31 airports Italian airports (2001-2003)	Address financial and operational performance (1) Role of dimension (2) Managerial status (3) Workload unit	Data Envelopment Analysis (DEA)	Productive performance
Correia, Wirasinghe, and de Barros (2008b)	Overall Level of Service Measures for Airport Passenger Terminals	Sao Paulo/ Guarulhos International Airport in Brazil	Overall Level of Service (OLS) measures Relationship between quantitative OLS and global indices (total service time, total walking distance, and two orientation indices).	Regression analysis	Quality services
Lam et al. (2009)	Operational Efficiencies Across Asia Pacific Airports	11 Asia Pacific airports	Dimensions of operational efficiencies (1) External macroeconomics (2) Price factors	Data Envelopment Analysis (DEA)	Operational efficiency

Table 2.6 (Continued)

Authors (Year)	Topic	Unit of Analysis	Research Focus	Data Sources & Methods	Theme
Diana (2010)	Can We Explain Airport Performance? A Case Study of Selected New York Airports Using A Stochastic Frontier Model	3 major international airports of New York	Technical efficiency Handling operations on-time by minimizing overall demand and maximizing available airport capacity	Stochastic frontier model Granger-causality test	Operational efficiency
He et al. (2010)	Service Efficiency Analysis of Chinese International Airports	30 Chinese international airports	Service efficiency	Data Envelopment Analysis (DEA)	Quality services
Manataki and Zografos (2010)	Assessing Airport Terminal Performance using a System Dynamics Model	Athens International Airport	Assessing the performance (1) Under demand (2) Resource deployment	Modeling Approach System Dynamics model	Productive performance
Yang (2010)	Measuring the Efficiencies of Asia-Pacific International Airports-Parametric and Non-Parametric Evidence	12 international airports in the Asia–Pacific region (1998-2006)	Estimating the efficiency of airports	Data Envelopment Analysis (DEA) Stochastic Frontier Analysis (SFA)	Operational efficiency
Yu (2010)	Assessment of Airport Performance using the SBM-NDEA Model	15domestic airports operated by the Civil Aeronautics Administration (CAA) in Taiwan during the year 2006	Overall Airport measurement (1) Production efficiency (2) Service efficiency	Slacks-based Measure Network Data Envelopment Analysis (SBM-NDEA) model	Airport competitiveness
Widener (2010)	Measuring Airport Efficiency with Fixed Asset Utilization to Minimize Airport Delays	US Airspace (Secondary data)	Systemic efficiency measurement which incorporates the interests of the airlines and the consumers with those of the airport operating municipalities.	Data Envelopment Analysis (DEA) Regression Models	Quality services
H.-K. Ha et al. (2011)	Comparative Analysis of Efficiency for Major Northeast Asia Airports	7 Northeast Asia airports	Efficiency performance (level and change of efficiency)	Data Envelopment Analysis (DEA)	Productive performance
A. G. Assaf, Gillen, and Barros (2012)	Performance assessment of UK airports: Evidence from a Bayesian dynamic frontier model	UK Airports (1998-2008)	Airports Efficiency Cost efficiency Efficiency over time	Bayesian dynamic frontier model Translog dynamic frontier model	Operational efficiency

Table 2.6 (Continued)

Authors (Year)	Topic	Unit of Analysis	Research Focus	Data Sources & Methods	Theme
Falcão, Zimmerman, and Correia (2012)	Level of Service Standards for Baggage Claim Facilities at Airport Passenger Terminals	Three major Brazilian airports with 425 passengers.	Level of service standards for baggage claim areas at airports.	Regression analysis	Quality services
Pyrialakou et al. (2012)	Assessing Operational Efficiency of Airports With High Levels of Low-Cost Carrier Traffic	10 Greek Airports (Handle 85% low-cost carriers demand in the country)	Overall operational efficiency such as gates, runways, aircraft movements, and number of enplaned passengers	Data Envelopment Analysis (DEA) Separate efficiency index	Operational efficiency
Scotti et al. (2012)	The Impact of Airport Competition on Technical Efficiency: A Stochastic Frontier Analysis Applied to Italian Airport	38 Italian airports (2005-2008)	Intensity of competition among airports affects their technical efficiency	Stochastic Frontier Analysis	Airport competitiveness
Chao et al. (2013)	Enhancing Airport Service Quality: A Case Study of Kaohsiung International Airport	Kaohsiung International Airport of Taiwan	Importance and satisfaction of domestic and international tourists	Questionnaire survey Importance-Performance Analysis (IPA)	Quality services
Widarsyah (2013)	The Impact of Airport Service Quality Dimensions on Overall Airport Experience and Impression	4 International airports in the West Coast region of United States with primary data of 304 travelers	Relationship between seven airport service dimensions such as (Access, Services and Facilities, Dining, Shopping, Service Personnel and Security, Environment, and Immigration and Customs)	Liner Regression Method Questionnaire survey	Quality services

management, training, economic impacts, return on investment, equipment, hub airports, locations, and the economic growth rate of the country. These factors help airport authorities to identify the strengths and weaknesses of operations, which provide direction in improving competitive advantages.

According to Pestana Barros and Dieke (2007), high managerial skills help the airport authority to improve performance by managing the operational efficiency of airports. In this, technical efficiency helps airports to use available resources effectively in terms of improving performance in the national market. In contrast to this, Andreatta et al. (2007) suggest that in order to measure the performance of an airport, development of decision support systems is essential for airport authorities for total airport performance analysis. The development of a decision support system can help airports to improve their decisions according to the needs of operations. Many authors (H.-K. Ha et al., 2011; Manataki, & Zografos, 2010) focus on the development of system dynamic model in order to evaluate terminal performance and capture important transactions to measure the performance of airports. But, to improve performance and productivity, airports do not only rely on the technical evolutions, but also adopt technical improvements such as better airport management, operations, and investment. It can improve the productivity as well as operational efficiency in an effective way.

It is effective for the airports to evaluate their operational efficiencies because many communities rely on airports for economic well-being. Deregulation and governmental funding is provided to improve the performance (Sarkis, 2000). Measurement of operational efficiency helps airport managers to identify the strong and weak areas of operations (Nyshadham & Rao, 2000; Sarkis, 2000). But, at the same time, Abbott and Wu (2002) present some contrary views by describing that changes in technology influences the growth of improvements in efficiency that negatively impact the performance of airports and also influence their competitiveness in the market.

Several authors (Oum, & Yu, 2004a; R.-T. Wang et al., 2004) say that operational efficiency can be assessed through different factors such as airport, passengers, airline companies, and fire services. The balance between these factors helps managers to provide effective ratings to the operations and identify the

ineffective areas in order to improve these areas for achieving better operational efficiency. It is also found that larger airports achieve high variable factor productivity (VFP) due to economics of scale, which help them to improve their operational efficiency significantly. On the other hand, Lam et al. (2009) reveals that there are various efficiency resources such as technology, allocation, mix and scale efficiency, and economic conditions that affect the overall cost efficiency of airports. Along with this, in some countries, airports are less cost efficient due to the country specific aspects that influence their operational efficiency in a negative way.

Yang (2010) states that operational inefficiency influences the production functions of airports that bring technical inefficiency to operations. Yang (2010) also suggests that airports should focus on the investment activities rather than human resources to improve operational efficiency. Bringing new technology and practices, could be helpful in improving the operational efficiency. In his research, Diana (2010) identifies that an airport is efficient if it can handle operations in time through reducing the overall demand and improving available airport capacity. Operational inefficiency influences the technical performance of an airport by directly impacting on the profitability in a negative way.

Opposing this, A. G. Assaf et al. (2012) state that in order to improve operational efficiency, micro economic and price factors help the airport authority to improve efficiency over time. Cost efficiency is an important determinant, which includes airport size, price regulations, price cap variations, and airport competition. However, Pyrialakou et al. (2012) says that airport efficiency does not depend upon the particular input, but a combination of inputs. In this, the correlations between passenger enplanements, hours of operation, and terminal efficiencies help airports to manage operations.

According to Correia et al. (2008b), customer perception about airport ***services*** is important to measure. In this, the level of service indicates the satisfaction of travelers and helps in measuring the performance of airports. Nowadays, the rapid growth of international passenger traffic has increased the practice of airports to provide high quality services to customers. In this, monitoring services is required to maintain high levels of service quality and to improve the efficiency of airports. But, technical inefficiency reduces the ability of airports to provide high quality services to

the customers (Adler & Berechman, 2001; He et al., 2010; Widener, 2010; Yeh, & Kuo, 2003). On the other hand, Chao et al. (2013) state that reducing waiting time at baggage claim, improving ground transportation, providing a comfortable terminal, and handling complaints help airport managers achieve high ratings, which help in determining the performance and efficiency of airports (Falcão et al., 2012; Widarsyah, 2013)

Among related research on operational efficiency and quality services themes mentioned above, most still emphasize numerical inputs and outputs without regarding the real reflection from airport users or customers. The efficiency of airports can be a mutual result derived from both airport productivity and airport operation. Thus, airport operational efficiency is one important aspect of airport management and operation measurement (Manataki, & Zografos, 2010; Vreedenburgh, 1999; R.-T. Wang et al., 2004).

It can be concluded that there are various factors in determining the efficiency and productivity of airports. In this, it is essential for managers to measure productivity and effectiveness on the basis of different factors. A detailed understanding of the ineffectual areas at airports could be helpful for airport managers in measuring efficiency of airports effectively.

From the above discussion, it can be concluded that productive efficiency helps managers to measure the performance of airports. It is found that most of the studies in this research focus on productive efficiency rather than operational efficiency, which provides the scope for researchers to create further research on operational efficiency in order to determine the operations and performance of airports. It will be helpful for the researcher to calculate the operational efficiency of airports, which will make more effective research.

2.4.6 A Summary of Airport Operational Attributes and Operational Procedures

In order to design tools for data collection for this research, airport operation was defined as: ‘The performance of services and facilities by airport operators—Thailand airports—using existing resources to serve domestic airlines and their passengers. Airport operation covers all related operational attributes and procedures

of both arriving and departing domestic passengers.'Moreover, operational attributes and procedures are concluded by considering the existing attributes and procedures at four Thailand airports as well.

2.4.6.1 Operational Attributes

In airport operations, there are several services and facilities called operational attributes. In order to study airport operations focusing on landside, various operational attributes are involved. The operational attributes of airports comprise of accessibility, parking & curbside, seat assignments, stairways & lifts, information desks, flight screens, announcements, information signs, airport staff, security screening, check-in process, baggage check-in, shops & retails, restaurants, departure hall, transportation from terminal to aircraft, arrival hall, baggage claim, baggage carts, tour services, rental facilities, safety & security measures, washrooms, bank services, public telephones, post office, health services, business services, and prayer rooms. However, the list used in this research was partly adapted due to the need to cover all attributes operated at four airports. Also, attributes were only selected when related to arrival procedures and departure procedures (Table 2.7). Thus, 30 operational attributes were dispersed to 34 attributes which were used in this research.

2.4.6.2 Operational Procedures

Since this research was proposed to study the overall picture of airport operation, it is not only the attributes of airport operational involved but also the procedures. In this part, operational procedures of airports are associated with arrival and departure procedures. Since the study on operational efficiency in this research is aimed to gather data from airport customers, the operational procedures are mainly focused on the landside operation. As earlier mentioned in section 2.3.2, arrival and departure procedures are divided into 9 processes.

Table 2.7 A Summary of Airport Operational Attributes from the Literature Review

Reviewed Attributes	Authors	Attributes Used
1. Accessibility	(Albers et al., 2005; Brilha, 2008; Chao et al., 2013; Horonjeff et al., 2010; IATA, 2006; O' Connell & Williams, 2005; Ryan & Birks, 2005)	1) Accessibility to the airport
2. Parking & curbside	(Albers et al., 2005; Brilha, 2008; Chao et al., 2013; Correia et al., 2008a, 2008b; Horonjeff et al., 2010; IATA, 2006; O'Connell & Williams, 2005; Ryan & Birks, 2005; R.-T. Wang et al., 2004)	2) Parking facilities
3. Seat assignments & waiting area	(Chao et al., 2013; Correia et al., 2008a; Horonjeff et al., 2010; IATA, 2006; Manataki & Zografos, 2010; Ryan & Birks, 2005)	3) Seat assignments & waiting area
4. Stairways / lifts / escalator	(Correia et al., 2008a; Horonjeff et al., 2010)	4) Stairways / lifts / escalators
5. Information desk	(Chao et al., 2013; IATA, 2006)	5) Information desk
6. Flight information & screen	(Chao et al., 2013; Correia et al., 2008a; Horonjeff et al., 2010; IATA, 2006; Yeh & Kuo, 2003)	6) Flight information screen
7. Public announcement	(Chao et al., 2013; IATA, 2006)	7) Broadcasting
8. Information signs	(Chao et al., 2013; Ryan & Birks, 2005)	8) Information signs
9. Airport staff / administrative persons	(Chao et al., 2013; Horonjeff et al., 2010; Pyrialakou et al., 2012; Yeh & Kuo, 2003)	9) Airport staff
10. Security screening	(Chao et al., 2013; Correia et al., 2008a; Horonjeff et al., 2010; IATA, 2006; Manataki & Zografos, 2010; Ryan & Birks, 2005)	10) Security screening
11. Check-in process / staff / counters	(Chao et al., 2013; Correia et al., 2008a, 2008b; Horonjeff et al., 2010; IATA, 2006; Manataki & Zografos, 2010; Pyrialakou et al., 2012; Ryan & Birks, 2005; R.-T. Wang et al., 2004)	11) Check-in counters
12. Baggage check-in	(Correia et al., 2008a; Horonjeff et al., 2010; IATA, 2006; Pyrialakou et al., 2012)	12) Baggage check-in
13. Shops / Retails / Concessions	(Albers et al., 2005; Brilha, 2008; Chao et al., 2013; Correia et al., 2008a; Francis et al., 2003; Horonjeff et al., 2010; IATA, 2006; Manataki & Zografos, 2010; Ryan & Birks, 2005; Yeh, & Kuo, 2003)	13) Retail shops
14. Restaurants (food & drinks)	(Albers et al., 2005; Brilha, 2008; Chao et al., 2013; Francis et al., 2003; Horonjeff et al., 2010; IATA, 2006; Ryan & Birks, 2005; Yeh, & Kuo, 2003)	14) Restaurants/eating facilities

Table 2.7 (Continued)

Reviewed Attributes	Authors	Attributes Used
15. Departure hall / lounge	(Correia et al., 2008a, 2008b; Horonjeff et al., 2010; Manataki & Zografos, 2010; R.-T. Wang et al., 2004)	15) Departure hall
16. Transport to/from aircraft (jet bridge, steps, buses)	(Brilha, 2008; IATA, 2006)	16) Aerobridges 17) Passenger steps 18) Airfield buses
17. Arrival hall / services	(Chao et al., 2013; Horonjeff et al., 2010; Manataki & Zografos, 2010)	19) Arrival hall
18. Baggage claim & belts	(Chao et al., 2013; Horonjeff et al., 2010; IATA, 2006; Manataki & Zografos, 2010; Yeh, & Kuo, 2003)	20) Baggage claim 21) Baggage belts
19. Baggage drop service	(AOT, 2014e, 2014f, 2014g, 2014h)	22) Baggage drop service
20. Baggage carts / trolley	(Chao et al., 2013; Correia et al., 2008a; IATA, 2006; Yeh, & Kuo, 2003)	23) Baggage carts/trolleys
21. Tour services / hotel counters / travel agents	(Brilha, 2008; Chao et al., 2013)	24) Tour/hotel services
22. Car rental / taxi service facilities	(Horonjeff et al., 2010; Yeh, & Kuo, 2003)	25) Car rental/taxis
23. Safety measures / Security	(Brilha, 2008; Chao et al., 2013; Horonjeff et al., 2010; Yeh, & Kuo, 2003)	26) Safety measures 27) Security staff
24. Health service	(Chao et al., 2013; ICAO, 1990)	28) Health service
25. Washrooms / toilets	(Chao et al., 2013; Correia et al., 2008a; IATA, 2006; Yeh, & Kuo, 2003)	29) Washrooms/toilets
26. Prayer room	(AOT, 2014e, 2014f, 2014g, 2014h)	30) Prayer rooms
27. Banks / Exchange services	(Chao et al., 2013; IATA, 2006; Yeh, & Kuo, 2003)	31) Bank/Exchange services
28. Post office	(AOT, 2014e, 2014f, 2014g, 2014h; IATA, 2006)	32) Post office
29. Public telephone	(Horonjeff et al., 2010; IATA, 2006)	33) Public telephone
30. Business center / internet / Wi-Fi	(Chao et al., 2013; IATA, 2006)	34) Wi-Fi/Internet services

Arrival procedures are concerned with four processes. They are 1) airplane to arrival hall (deplane), 2) arrival hall to baggage claim, 3) baggage claim to retail services, and 4) terminal gate to ground transport. For departure procedures, five passenger processes are described: 1) ground transport to terminal, 2) terminal gate to check-in counters, 3) check-in counters to security screening, 4) security screening to departure hall, and 5) departure hall to airplane. Moreover, each process is comprised of several operational attributes. For examples, accessibility and parking which are operational attributes belong to both arrival procedure and departure procedure in different ways. That is, accessibility and parking attributes are in the fourth process of arrival procedure which is terminal gate to ground transport process as well as in the first process of departure procedure which refers to the process from ground transport to terminal (Table 2.8). Thus, some operational attributes relate to more than one operational procedure.

2.5 Airport Customers

In fact airlines are the key customers of airports whereas passengers are the primary customers of the airlines and are a secondary group of airports' customers. (Francis et al., 2003; Humphreys, & Francis, 2002; Jarach, 2001). Airlines and passengers are viewed as primary and secondary customers of airports (Forsyth, 2009; Francis, Humphreys, & Ison, 2004; Anne Graham, 2008; R.-T. Wang et al., 2004). Undoubtedly, both airlines and passengers can generate revenue for airports. Airlines pay aeronautical revenue to airports (e.g., landing fees, aircraft parking charges, air traffic control, or aerobridges) (Francis et al., 2004) while passengers have to pay airport charges or other service charges to use facilitated equipment and services.

Thus, the content of reviewed literature on airport customers section are divided into two parts; low-cost carriers and low-cost carrier passengers. The requirements and characteristics of both airport customer groups are depicted in each subsection. Related theories on airport customers, (decision making theory, psychological theory, consumer behavior theory, and motivation theory) are also mutually revealed prior the last subsection of related research on airport customers.

Table 2.8 Operational Procedures and the Attributes

Operational Procedures	Operational Attributes*																																			No. of Attributes
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
Arrival Procedures																																			
1) Airplane to arrival hall						✓	✓	✓	✓							✓	✓	✓								✓									8
2) Arrival hall to baggage claim			✓			✓	✓	✓	✓										✓	✓	✓		✓			✓			✓				✓	✓	13
3) Baggage claim to retails				✓	✓		✓	✓	✓				✓	✓								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	20
4) Terminal gate to ground transport	✓	✓	✓					✓	✓																✓	✓									7
Departure Procedures																																			
5) Ground transport to terminal	✓	✓	✓					✓	✓														✓			✓									7
6) Terminal gate to check-in counters			✓	✓	✓	✓	✓	✓	✓	✓			✓	✓								✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	21
7) Check-in counters to security screening			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓								✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	22
8) Security screening to departure hall								✓	✓	✓																✓	✓							✓	6
9) Departure hall to airplane			✓			✓	✓	✓	✓				✓	✓	✓	✓	✓	✓								✓	✓		✓					✓	15

Note: 1: Accessibility, 2: Parking facilities,, 3: Seat assignments & waiting area, 4: Stairways / lifts / escalators, 5: Information desk, 6: Flight information screen, 7: Broadcasting, 8: Information signs, 9: Airport staff, 10: Security screening, 11: Check-in counters, 12: Baggage check-in, 13: Retail shops, 14: Restaurants / eating facilities, 15: Departure hall, 16: Aerobridges, 17: Passenger steps, 18: Airfield buses, 19: Arrival hall, 20: Baggage claim, 21: Baggage belts, 22: Baggage drop service, 23: Baggage carts / trolley, 24: Tour / hotel services, 25: Car rental / taxi, 26: Safety measures, 27: Security staff, 28: Health service, 29: Washrooms / toilets, 30: Prayer room, 31: Banks / exchange services, 32: Post office, 33: Public telephone, 34: Wi-Fi / Internet services

2.5.1 Low-Cost Carriers

Generally, the visitors' choice of transportation modes depends on various factors including time, price, distance, status, convenience, safety and security, and a range of services. Undoubtedly, air transportation which offers speed, comfort, frequency, reliability, and safety is the most attractive mode of transport in the 21st century. A number of commercial airlines including low-cost carriers have risen since airline deregulation (Francis et al., 2004; M. Graham, 2009). Airports Council International (ACI) has anticipated that global air passengers will grow annually by 4.2% from 2008 to 2027 (AOT, 2013b). Competition in the airline industry has necessitated players to make concerted efforts in ensuring the delivery of quality services at competitive price. This has seen the rapid rise of low-cost carriers (LCC) across the globe.

2.5.1.1 Emergence of LCC

Even with no exact definition of a low-cost carrier, some concepts are identified. O'Connell, & Williams (2005) view that low-cost carriers mainly focus on high efficiency (Francis et al., 2004), large cost reductions (Barrett, 2004), lower price levels (Barrett, 2004; Fabian, Jung, Montealto, Yu, & Gueta, 2013; Francis et al., 2004), short-distance traffic, secondary airports, and basic services.

The first low-cost carrier emerged during US deregulation. The LCC concept was pioneered by Pacific South West, an American airline company (Dobruszkes, 2006), and perfected by the Southwest Airline in 1973 (David Gillen & Morrison, 2003). The main strategies to attract air passengers to Southwest were based on short-distance traffic, high efficiency, large cost reductions, and lower prices compared to competitors (Nilsson, 2009). These strategies make 'Southwest Airline—SWA', the first low-cost carrier, which gained new opportunities in achieving new market segments (Dobruszkes, 2006; Doganis, 1992; Nilsson, 2009). The new market segments refer to price-sensitive leisure travelers (Francis et al., 2004; Komsan Suriya, 2006; O'Connell, & Williams, 2005). In the US, full service carriers have lost a significant portion of their market share due to LCC (O'Connell, & Williams, 2005). The so-called 'Southwest effect' spread to Europe and over the world (Castillo-Manzano, 2010; de Wit, & Zuidberg, 2012; Nilsson, 2009).

In Europe, commercial airlines as well as low-cost airlines grew during the 1987-1995 period of deregulation in Europe. That is, the operation of low-cost carriers commenced in the mid-1990s by Ryanair which provided cheap travel at secondary airports between the UK and Ireland. In late 1995, Easyjet launched its LCC operation from Luton, London to other cities and focused on major airports (Nilsson, 2009; Williams, 2001). The development of LCC is a way in which the airline industry has responded to market conditions. In Europe, LCCs have managed to attract a high volume of price sensitive consumers, leading to a rapid expansion of the European airline industry (Hörsch, 2003). Besides the two mentioned LCCs which operated routes in Europe, a number of low-cost carriers are found in Europe: Norwegian, Wizz Air, Vueling, Germanwings, Blue Air, Bimibaby, Air One, and Sky Express (de Wit, & Zuidberg, 2012). Dobruszkes (2006) pointed out that LCC in Europe accounts for 18% of the total number of seats supplied.

In Asia, the concept of LCCs can be described as a recent phenomenon. This is because the entry of LCCs into the region is traced back to 1998 with the entry of Skymark Airlines with a Tokyo-Fukuoka route and Air Do with a Tokyo-Sapporo route (Forsyth, King, & Rodolfo, 2006; Lawton, & Solomko, 2005; O'Connell, & Williams, 2005). However, the dynamics of low cost carrier in Asia have followed a similar path as that of the mature markets. Southeast Asia has experienced more growth in LCCs than Northeast Asia. D. Gillen and Natthida Taweelertkunthon (2007) and Forsyth (2003) argue that Southeast Asia adopts airport operation models that provide better environment for the operations of LCCs. Over the past two and half decades, the Asia region has recorded one of the highest regional growths in aviation (Forsyth et al., 2006).

The growth of LCC can utilize the airports' spare capacity as well as increase airport revenue (Forsyth, 2009; Francis et al., 2004). According to Dunn (2011), after decades of accelerated growth and continued profitability, the low cost carriers are not only redesigning their operations, they are also re-examining airport operations models. One of the most important features observed in the operations of low cost-carriers is the remodeling of airport operations.

2.5.1.2 LCC Characteristic

Several factors have contributed to the emergence and rapid growth of LCC. A significant feature that characterizes LCC is low fares (Barret, 2008; Barrett, 2004; Fabian et al., 2013; Francis et al., 2004; Nilsson, 2009; O'Connel,l & Williams, 2005; Williams, 2001). Offering low fares is cited as one of factors behind the exponential growth of the LCC concept around the world. According to Hörsch (2003), LCC charge 50-70% less than full service carriers. Many LCC passengers opt to use these services because of the promise of low fares. For a long time, the price of air transport has been a limiting factor to a significant segment of the world's population (Dobruszkes, 2006). The fare scheme is also simple and standardized to facilitate self-service. Due to the simplicity of the fare scheme, consumers can purchase tickets by themselves through the internet (Atalık, & Özel, 2008).

Another feature of LCC growth is the point-to-point service concept (de Neufville, 2004; Anne Graham, 2008; O'Connell & Williams, 2005). This concept entails providing airline services from one point to another rather than operating from a hub. The point-to-point concept has enhanced LCCs' capacity to offer services in under-served airline routes. In Europe, LCC have provided new momentum to the airline industry by provided new point-to-point routes and complementing full-service networks (Dobruszkes, 2006). Numerous new routes have been created by LCC. The point-to-point concept has also reduced costs for LCCs by bypassing hubs and establishing a direct connection to passengers.

LCCs are also characterized by a high frequency of flights and large volume of passengers (Fabian et al., 2013; O'Connell, & Williams, 2005). As already discussed, offering cheap fares is one of the competitive priorities of LCC. The high frequency of flights and large passenger volumes enable LCC to deliver cheap prices by leveraging on economies of scale. They also have short turnaround times, which enable them to make effective use of their planes (Atalık, & Özel, 2008; O'Connell, & Williams, 2005; O'Connor, 1995).

LCCs tend to use high capacity planes and travel frequently over short distances (Hörsch, 2003; O'Connell, & Williams, 2005). Since LCCs seek to reduce the impact operating costs have on the price of their services, they tend to avoid long

routes as long routes consume more fuel than shorter routes (Najda, 2003). The aircraft are characterized by a high number of seats meant to accommodate a large volume of passengers. The flight density reduces the unit costs of flights (Dobruszkes, 2006; Hanlon, 2007; Nilsson, 2009; O'Connell, & Williams, 2005). The low fares enable LCCs to attract many passengers thus enabling them to offset costs and earn profits from small markups. Clearly, another benefit of low-cost carriers is that they can stimulate higher number of tourists to destinations (Olipra, 2012).

Utilizing flexible booking systems is also a vital feature of LCC (Hanlon, 2007; Nilsson, 2009; O'Connell, & Williams, 2005). Fabian et al. (2013), studied LCC in the Philippines, and found that most LCCs operating within the Philippines utilize the internet to allow passengers to select flights and book seats. The use of internet bookings appears to dominate other channels of making reservations. Simplified ticketing or ticketless booking (Hanlon, 2007; Nilsson, 2009; O'Connell & Williams, 2005) help LCCs to avoid expenses associated with commissions paid to travel agents and corporate booking systems (Atalık & Özel, 2008). The online booking systems also have minimal restrictions since they are controlled by the airline. In addition, the online ticketing option increases customer convenience, as well as facilitates prompt delivery of services.

LCCs are also characterized by strict schedules. On-time performance is one of the significant expectations of LCC passengers (O'Connell, & Williams, 2005). Fabian et al. (2013) noted a significant link between passenger volume and on-time performance. On-time performance is also supported by the point-to-point service concept that enables LCCs to establish direct connections between routes thus saving time that would have otherwise been spent going through a hub (Dobruszkes, 2006).

LCCs are also typified by standardized services and a free-seating system. LCCs are distinguished from full-service aircraft by their tendencies to incorporate minimal frills into their services (de Neufville, 2004; Hörsch, 2003; O'Connell & Williams, 2005). These carriers focus on providing the core services enabling them to minimize costs and hence deliver low prices. Things such as complimentary services or free in-flight meals are non-existent (Atalık, & Özel, 2008). Thus, in-flight sales are mostly used by LCCs (Hanlon, 2007; Nilsson, 2009;

O'Connell, & Williams, 2005). Similarly, LCCs are characterized by homogenous fleets of aircrafts (Almeida, 2010; O'Connell, & Williams, 2005). Many LCC have a single plane type, often the Boeing 737 or the Airbus A 320 (Atalık, & Özel, 2008; O'Connell, & Williams, 2005) and also have single class ticket (Hanlon, 2007; Nilsson, 2009; O'Connell, & Williams, 2005). A homogenous fleet reduces maintenance costs of LCC as they can buy parts and outsource services in bulk. Having a homogenous fleet also reduces training costs.

In summary, low-cost carriers have specific characteristics different from full service carriers. That is, the low-cost carrier is a specific type of air carrier focusing on low costs, low fare tickets, basic in-flight services, no seat allocation, point-to-point routing, high flight frequencies, short turnaround times, a single aircraft type, high capacity aircraft, high number of seats per aircraft, and an online booking system. Refer to Table 2.9 for a summary of LCC characteristics.

However, in this research, low-cost carriers (LCC) are airlines that currently operate domestic passenger flights following the low-cost schemes at Thailand airports. Some examples of low-cost schemes are cost saving, lower fare tickets, basic flight services, short turnaround times, and online reservations. Three low-cost carriers involved in the research are Thai AirAsia, Nok Air, and Orient Thai Airlines.

2.5.1.3 LCC Development in Thailand

A growth of low cost carriers (LCCs) has occurred in Thailand. According to de Neufville (2006), whereas the demand for LCCs is potentially huge and promising, its development lags behind the mature markets in North America and Europe. Also, the entry of LCCs in Thailand was delayed by the protection of the State-owned Thai Airways. A. Zhang, Hanaoka, Inamura, and Ishikura (2008) assert that Thai's Department of Civil Aviation prohibited private airlines from flying the routes that Thai Airways operated. The regulation of fares was set by the department based on the distance of travel and route types.

Table 2.9 Characteristics of Low-Cost Carriers and Full-Service Carriers

Product Features	LCC Characteristics	FSC Characteristics
1. Aircraft	Single type: commonality	Multiple types: scheduling complexities
2. Aircraft utilization	Very high	Medium to high: union contracts
3. Airports	Secondary airports (mostly)	Primary airports
4. Ancillary revenue	Advertising, on-board sales	Focus on primary product
5. Brand	One brand: low fare	Brand extensions: fare + service
6. Check-in	Ticketless	Ticketless, IATA ticket contract
7. Class segmentation	Single class (high density)	Two class (dilution of seating capacity)
8. Connections	Point-to-point	Interlining, code share, global alliances
9. Customer service	Generally under-performs	Full service, offering reliability
10. Distribution	Online and direct booking	Online, direct, travel agents
11. Fares	Simplified: fare structure	Complex fare: structure + yield management
12. In-flight services	Pay for amenities	Complementary extras
13. Operational activities	Focus on core (flying)	Extensions: e.g., maintenance, cargo, etc.
14. Product	One product: low fare	Multiple integrated products
15. Seating	Small pitch, no assignment	Generous pitch, offers seat assignment
16. Turnaround time	25 minutes turnaround time	Longer turnaround time: congestion/labor

Source: O'Connell and Williams, 2005.

During early 2002, Thai's aviation industry gradually deregulated (Kittinan Nakthong, 2013; Somprattana Samintarapanya, 2010), paving way for the entry of foreign airlines into Thailand's domestic routes. A number of low-cost carriers originating from both Thailand and other countries gained opportunities to operate scheduled flights in Thailand.

In December 2003, the first local LCC, Orient Thai Airlines, emerged with an outstanding concept called 'One-Two-Go' (AOT, 2011a; O'Connell, & Williams, 2005). The first scheduled commercial flight of One-Two-Go by Orient Thai was operated from Bangkok to Chiang Mai with the recorded lowest price of 999 Baht which had never been seen in the history of Thai aviation. Fixing the price for all seats on the same flight is a distinctive characteristic of Orient Thai (Somprattana Samintarapanya, 2010). The emergence of low-cost carriers urges Thais and foreigners to travel within Thailand. The low-cost carrier market has shown an increasing number of developments. Only a year after premiering One-Two-Go, two other LCCs (Thai Air Asia and Nok Air) began operations and flight services in February and July of 2004, respectively (O'Connell, & Williams, 2005).

Thai Air Asia (Thai Air Asia Company Limited), a Malaysian based airline, has risen in 2003 with the notable slogan 'Everyone Can Fly'. The phrase could attract travelers with no experience flying into trying the LCC with affordable prices. Moreover, passengers could simply make a reservation via the Thai Air Asia website. Unlike Orient Thai Airlines, the non-fixed price of Thai Air Asia is dependent on booking dates, flight times and dates, booking methods, and sales promotions. 'Free Seats' or 'Big Sales' promotion is very attractive for passengers who can buy cheap tickets at 0 Baht. Passengers are not served with free food nor drinks on board – no frills service –but food, drinks, and souvenirs are available on board at extra charge. Thai AirAsia launched its first flight between Bangkok and Hat Yai in February, 2004. Not long after the grand opening of Thai Air Asia, Nok Air, a subsidiary of Thai Airways joined this alluring market.

'Nok Air', Thai owned airline, was first established on February10, 2004 and launched the initial flight from Bangkok to Chiang Mai on July 23, 2004. The leading mission of Nok Air is to be the number one low-fare, high-value budget airline in both Thailand and Asia (Nok Air, 2014). Nok Air also facilitates passengers

by offering online booking, free seat selection, free baggage loading at 15 kilograms, free snacks and drinks on board, and membership. Nok Air became a leader of low-cost airlines, generating flights and now covering many Thailand domestic airports.

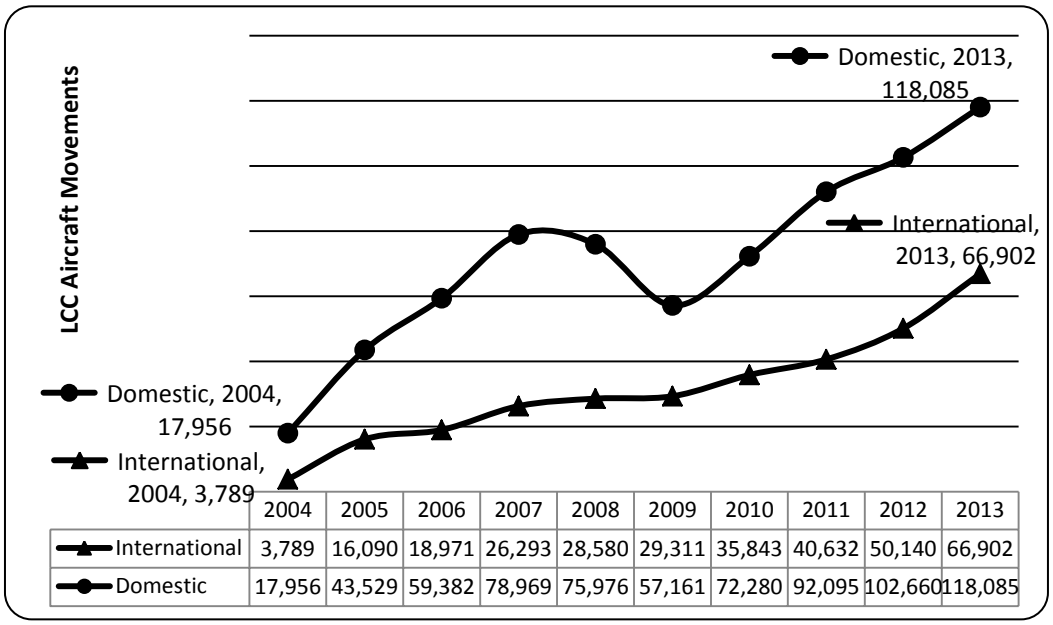
Orient Thai Airlines, Thai Air Asia and Nok Air have initially played significant roles on domestic routes and subsequently extended international routes. Recently in December 2013, Thai Lion Air, an Indonesian airline, just launched both Thailand domestic flights and international flights between Thailand and other neighboring countries. Table 2.10 displays the current players in the LCC industry. This undoubtedly shows that competition in the LCC market within Thailand is energetic.

Table 2.10 List of Low-Cost Carriers Currently Operating in Thailand

Carriers	Date of First Flight	Country of Origin	Domestic Airports	International Airports	Charter Flight
Orient Thai Airlines	December 3, 2003	Thailand	2	2	✓
Thai Air Asia	February 3, 2004	Malaysia	15	24	✓
Nok Air	July 23, 2004	Thailand	27	4	✓
Thai Lion Air	December 4, 2013	Indonesia	5	4	N/A

Source: Asia Aviation, 2012; Kittinan Nakthong, 2013; Nok Air, 2014; Thai AirAsia , 2013; Thai Lion Air, 2014; Thai Lion Air, 2014.

Figure 2.3 displays how passenger volume has grown over the years. Beginning from the end of 2003, each fiscal year from 2004 to 2013 is shown. The Thai fiscal year starts from October 1st to September 30th, so fiscal year 2004 refers to the 12-month period from October, 2003 to September, 2004. In fiscal year 2004, aircraft movements of low-cost carriers had started at 17,956 domestic flights and 3,789 international flights (AOT, 2014a).

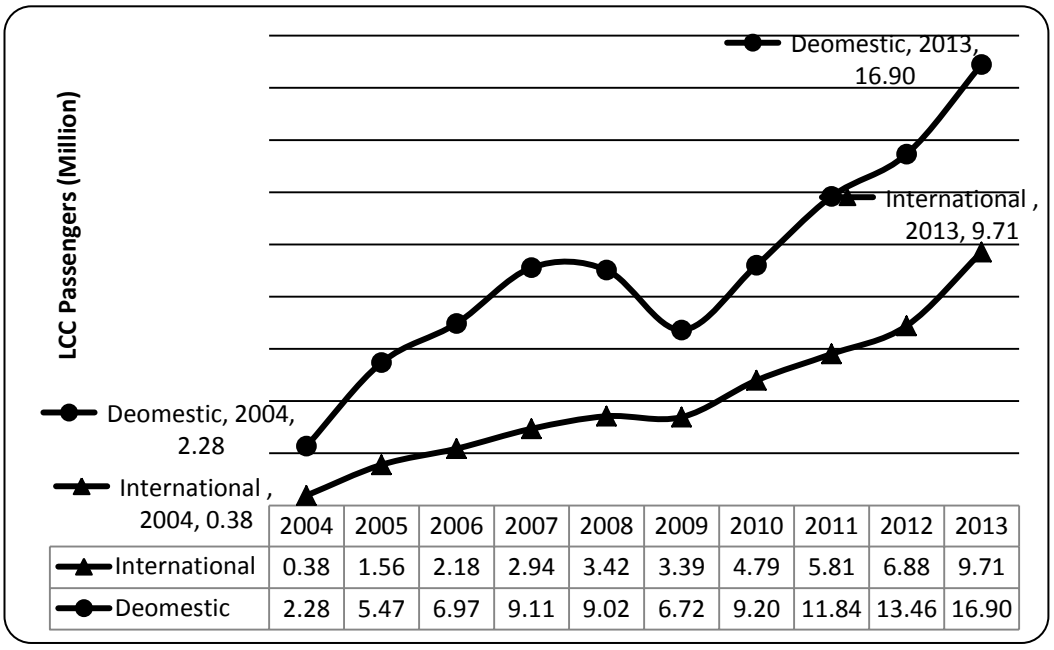


	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
International	3,789	16,090	18,971	26,293	28,580	29,311	35,843	40,632	50,140	66,902
Domestic	17,956	43,529	59,382	78,969	75,976	57,161	72,280	92,095	102,660	118,085

Figure 2.3 LCC Aircraft Movements from Fiscal Year 2004 to 2013
Source: AOT, 2014a.

In 2013, LCC aircraft movements can achieve 118,085 domestic flights with 557.60% of 10-year growing rate. Even though international LCC aircraft movements seem to be lower than those of domestic flights, the changing percent is multiplied. From 2004 to 2013, percent changed of LCC aircraft movements on international flights is 1,665.69% (3,789 to 66,902). These obviously show that low-cost carriers have continuously grown in years. Not only a number of LCC aircraft movements but also a number of LCC passengers have risen.

In the first fiscal year of LCC operation in Thailand, low-cost carriers attained more than 2 million domestic passengers and 383,024 international passengers in 2004 (Figure 2.4). Positive yearly changes have been found in both domestic and international flights. In 2013, LCC domestic passengers have been growing at 642.54% with 16,897,511 passengers whereas international passengers grew by 2,434.58% (383,024 to 9,708,052). Presently, the four LCCs (Orient Thai Airlines, Thai AirAsia, Nok Air, and Thai Lion Air) are not the only carriers in Thailand but a number of other low-cost carriers operate international flights.



	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
International	0.38	1.56	2.18	2.94	3.42	3.39	4.79	5.81	6.88	9.71
Deomestic	2.28	5.47	6.97	9.11	9.02	6.72	9.20	11.84	13.46	16.90

Figure 2.4 LCC Passenger Movements from Fiscal Year 2004 to 2013
Source: AOT, 2014a.

In 2012, besides the four LCCs mentioned, there were 17 low-cost carriers operating international flights at AOT airports. The 17 LCCs include 1) Air Asia, 2) Tiger Airways, 3) Jetstar Asia, 4) Jetstar Airways, 5) Cebu Pacific Air, 6) Indonesia Air Asia, 7) Jeju Air, 8) Jin Air, 9) IndiGo Airlines, 10) Eastar Jet, 11) T'Way Airlines, 12) Tomsonfly, 13) Scoot, 14) Spring Airlines, 15) Mandala Airlines, 16) Firefly, and 17) Condor Flugdienst (AOT, 2013a).

During the period of December, 2003 to September 28, 2006, Orient Thai Airlines, Thai Air Asia, and Nok Air were based in Don Mueang International Airport which was the biggest airport and called Thailand's hub airport at the time. Since the official commencement of Suvarnabhumi Airport in September 28, 2006, only Thai Air Asia had moved its base to the new airport, Suvarnabhumi (AOT, 2011c). Thai Air Asia operated both international and domestic flights from the new airport, whereas Orient Thai Airlines and Nok Air operated domestic flights at Don Mueang International Airport since the size and function of the airport fit the two low-cost carriers' operation. However, in 2012, Thai Air Asia, Thailand's largest low-cost carrier, had to move from Suvarnabhumi International Airport to Don Mueang

International Airport, because of the need to find an airport that suits its business model as a low-cost carrier (Tassapon Bijleveld, 2013).

2.5.1.4 LCC Requirement on Airport

The growing influence of LCC cannot be overlooked. Airports must find ways of attracting LCCs in order to make profits (Dobruszkes, 2006). LCCs prefer fewer check-in counters and simpler baggage handling systems than full service airlines. Additionally, lounges, transfer facilities, aerobridges, and airfield buses are not needed (Echevarne, 2008; Anne Graham, 2008). This implies that airports need to adjust their designs and operations to suit the airport requirements of LCC (Echevarne, 2008; Forsyth, 2009; Anne Graham, 2008). Airport design that can accommodate a high volume of passengers is one of the LCC requirements for an airport. Low fares is a significant feature among LCCs (Atalık & Özel, 2008), so many LCCs strive to obtain operational efficiency and economies of scale to lessen costs significantly (Echevarne, 2008; Anne Graham, 2008; O'Connell & Williams, 2005). Consequently, LCCs expect airports to have efficient designs that can accommodate a growing number of flights (Fabian et al., 2013; Forsyth, 2009; Anne Graham, 2008). Designs of airports should accommodate large volumes of passengers. To review the requirements of LCC, refer to Table 2.11.

Another significant requirement is an efficient air traffic control system. LCCs promise on-time services, and operate on strict schedules. Consequently, they expect airports to develop efficient air traffic control (Echevarne, 2008; Fabian et al., 2013). Efficient air traffic control systems eliminate delays, and enables LCCs to maintain on-time performance. LCCs also expect airports to have the capacity to check-in and check-out large volumes of passengers without delays.

LCCs also expect airports to be well served by a reliable ground transport network (Echevarne, 2008; Hörsch, 2003). LCC passengers are also interested in convenience. Therefore, LCC expects airport facilities to be easily accessible by road, rail, and other transport services. This will make certain that passengers are able to access services within a short time (Echevarne, 2008). LCCs also prefer to operate in

Table 2.11 LCC Requirements on Airport Services

Operational Areas	LCC Requirements
1. Accessibility & Car Parking	– Airports with public transportation systems
	– High demand for car parking facilities
	– Secondary airports
2. Check-in	– Fewer check-in desks (one single class and web check-in)
3. Baggage handling systems	– Very simple as flights are point-to-point
4. Office accommodation	– Simple & functional (low operating costs)
5. Airline lounges	– Not needed
6. Transfer facilities	– Not needed
7. Aerobridges	– Not needed (LCC prefer steps for quicker boarding and disembarking)
8. Airfield buses	– Not needed (LCC prefer steps for quicker boarding and disembarking)

Source: Graham, 2008, p. 99; Echevarne, 2008, p. 187; Williams; 2001, p. 279.

small airports located on routes that are underserved by full service carriers (Atalık, & Özel, 2008). Use of cheaper secondary airport enables LCCs to avoid delays associated with busy airports and reduce costs associated with airport fees.

LCCs also require secondary airports that have no congestions inside the building or on the runway (de Neufville, 2008; Williams, 2001). This is because LCCs promise convenience and on-time performance. Having airports that are congested hinder the carriers from delivering on this promise (J. Wang & Namen, 2004). Similarly, the LCC prefer airports with minimal frills (Abdelaziz, Hegazy, & Elabbassy, 2010). Frills within an airport increase the cost of running the airport. This, in turn, leads to an increase in charges thus eroding the cost advantage of LCCs.

2.5.2 Low-Cost Carrier Passengers

In consideration to airport customers, not only airlines but also passengers should be taken into account (Fodness, & Murray, 2007; E. Poh, 2007; Schneiderbauer, & Feldman, 1998; R.-T. Wang et al., 2004). Different groups of

customers might require different facilities and service (Graham, 2008; Humphreys, & Francis, 2002; Manataki, & Zografos, 2010; Schneiderbauer, & Feldman, 1998, p. 6).

2.5.2.1 LCC Passenger Characteristic

LCC passengers are defined by high price elasticity (Diggines, 2010). Price elasticity is an economic concept that refers to the responsiveness of customer demand to changes in the price of a given commodity (Kouhpaei, 2011). According to Diggines (2010), LCC passengers are highly sensitive to changes in ticket price. A small increment in the price can lead to a momentous decrease in demand.

In Europe, LCC passengers mainly visit their relatives or friends (Hörsch, 2003). This group lives in urban areas, especially in airports' catchment areas, and has a great deal of experience travelling abroad. A study conducted by Atalık, and Özel (2008) suggests that LCC passengers are often young adults aged 27 to 37 years old.

In an effort to understand LCC passengers, Edwards (2011) grouped travelers into two broad categories: leisure travelers and business travelers (Brilha, 2008). The author noted that LCC passengers mainly constituted leisure travelers who are more sensitive to price than business travelers (Edwards, 2011; Francis et al., 2004; O'Connell & Williams, 2005). Edwards (2011) further divided the leisure travelers into five distinct categories: budget travelers, homebodies, vacationers, moderates, and independent travelers. Many LCC passengers fall under the independent traveler category. Independent travelers prefer to make their own travel arrangements rather than purchasing prepackaged services.

However, not only leisure segments but also business segments choose LCC service (Edwards, 2011; O' Connell, & Williams, 2005). Edwards (2011) noted that LCCs gained market share among business travelers in UK. That is, 71% of airline passengers reported to have used LCC for business purposes (Edwards, 2011). This trend presents evidence that there is a shift in the mode of business travel in favor of LCC. Business travelers consider benefits provided by LCC other than price. Such benefits include convenience, on-time performance, and point-to-point flights.

These views are supported by Martínez-Garcia, Ferrer-Rosell, and Coenders (2012) who have sought to establish the profile of LCC travelers within Europe.

Martínez-Garcia et al. (2012) found that demand for LCC services among business travelers was increasing. They attributed this trend to the fact that LCCs offer service attributes that are highly valued by business travelers. The study also found that business travelers tend to travel regularly and have a shorter length of stay than leisure travelers. They also tend to participate in few activities at their destinations. However, the analysis reveals that low fares were the least motivating factor for business travelers (Martínez-Garcia et al., 2012). Attributes that were valued most by business travelers include airport proximity to their destinations and flight quality.

2.5.2.2 LCC Passenger Decision Making Factors

Purchase decisions are influenced by different factors. In order to determine the model airport for LCC, it is critical to understand factors that influence purchasing decisions of LCC passengers. L. S. Poh and Mohayidn (2011) argue that price is the most significant influence on LCC passengers' decisions. These authors believe that the concept of LCC has gained rapid popularity largely due to the airlines competitive pricing strategies. This view is reinforced by Tolpa (2012), who argue that LCCs differentiate themselves by providing cheap fares.

A study conducted by O'Connell and Williams (2005) concluded that the decision to select an LCC is founded on a blend of factors including reliability, on-time performance, low fares, schedule convenience, and market presence. However, a majority of participants of this study cited that low fare was, by the far, the most vital factor in choosing LCC services. The ability to make reservations over the internet was also cited as a vital factor (O'Connell & Williams, 2005).

Another study by Wittman (2013) hints that quality of service is not a significant decision-making factor for LCC passengers. In this study, it was found that passengers of LCC were less likely to complain about the quality of service than passengers of full service carriers given the same level of service quality. Wittman (2013) explained this behavior using the lack of information and price-based expectation theories. The lack of information theory suggests that LCC passengers

rarely complain about the quality of service because they lack information concerning the ideal level of quality. The price expectation theory suggests that LCC passengers have low expectation concerning the quality of service that they ought to receive because the relatively cheap fares (Atalık & Özel, 2008).

Atalık and Özel (2008) focused on investigating factors that affect choice of LCC among Pegasus Airline passengers. They identified a number of critical factors that influence LCC passengers' decisions: safety, on-time performance, convenience of schedule, behavior of personnel, price, and baggage services. Recommendation by travel agents, types of airlines, and food were rated as the least significant factors. A similar study was also conducted by Sittichai Charoensettasilp and Wu (2013) but with a specific focus on Thailand's air transport services. Specifically, the study sought to investigate the level of expectations and satisfaction among domestic low-cost airline consumers. Sittichai Charoensettasilp and Wu (2013) found that availability of online booking services, flight attendants' language skills, easily located ticketing counters, and airline image were the most significant factors in influencing LCC consumers' expectations and satisfaction. This implies that these factors will also have a significant impact on purchasing decisions.

In summary, the decision of LCC passengers is influenced by a myriad of factors. However, the most vital factors include safety, price, on-time performance, and schedule convenience. However, other factors such as image of the carrier, baggage services, and personnel behaviors are growing in significance.

2.5.2.3 LCC Passenger Requirement on Airport

Several studies suggest that the price of fare is one of the most significant factors when passengers select LCC services (O'Connell & Williams, 2005; Poh, & Mohayidn, 2011; Tolpa, 2012). Consequently, LCC passengers prefer airports that minimize costs both to themselves and the airlines (de Neufville, 2008). The LCC have resulted in the development of low-cost airports in different parts of the world (Hanaoka, & Saraswati, 2011). These airports have minimal start-up costs as they only provide runways and a few basic facilities.

A significant requirement of LCC passengers is an airport with flexible and economical infrastructure. LCCs prefer these airports because they appreciate low

charges that characterize these airports. Low cost airports are designed to cut down frills. They often have minimal commercial facilities. According to Malighetti, Paleari, and Redondi (2009), the core of the LCC concept is simplicity. This concept advocates a simple and direct measurement of costs and revenues. LCC passengers often wait for their flights in small board rooms thus reducing the rent cost for carriers (Steinert, 2009). A study conducted by Volkova (2011), revealed that low cost airports allocate commercial activities differently. The study focused on the allocation of food and beverage services within low cost airports.

Another significant requirement for LCC passengers is security. According to Steinert (2009), the aviation industry is facing new challenges because of terrorism. The September 11, 2001 attack on the United States demonstrated how airports and airlines are targets for terrorists. Airports have no choice but to upgrade their security systems and policies. New security protocols and systems require more investment and additional space, thus undermining the low costs concept.

LCC passengers also require airports that are have minimal congestion and are free from traffic and ground delays (de Neufville, 2008). Some literature established that LCC passengers' decisions are also influenced by the on-time performance that characterizes the LCC services. Consequently, these passengers require airports that will not undermine this essential service attribute. They require airports that facilitate easier movement of both passengers within the airport, and of the aircrafts on the runways. They require terminals to process a large volume of passengers quickly (Dobruszkes, 2006).

LCC passengers also require airports that give common-use terminal rather assigning airline-specific areas within the terminal (de Neufville, 2008). The common-use terminal strategy enables airline to save cost by paying for only the time that their aircraft are at the terminal (Steinert, 2009). It also helps the airports to optimally use space to accommodate a high volume of passengers. Implementing the common-use terminal strategy requires state of the art technology. This technology enables airports to change logos and colors when one airline leaves and another comes into the terminal. (Volkova, 2011).

A significant technology that has facilitated the development of the LCC concept is the self-service technology. Self-service is a concept that places control of the service process in the consumer's hands (Ljungblad, 2001). This concept originated in the retail industry and spread to other industries such as food and beverage and banking. Abdelaziz et al. (2010) noted that the concept of self-service was gaining popularity within the aviation industry. Airports and airlines have begun investing in self-service technologies such as check-in kiosks and the e-ticket technology that allows passengers to purchase tickets through the internet (Abdelaziz et al., 2010). Self-service technologies have reduced costs associated with labor and increased the efficiency of services. These technologies also allow customers to save a significant quantity of time (Wang, & Namen, 2004). The concept also enhances the quality of services as it allows each customer to customize offers in line with their needs and preferences.

LCC passengers also require airports with fast turn-around times. According to de Neufville (2008), most low-cost airports have a turnaround of about 30 minutes rather than the standard turnaround time of one hour. This airport characteristic gives LCC a momentous financial advantage as the aircrafts can make numerous trips in a day. LCC passengers also require airports that have established rich networks with other airports (Almeida, 2010). The provision of point-to-point services is one of the features that have augmented the popularity of the LCC concept.

In application to this research, low-cost carrier passengers' requirements delineate significant gaps between efficiency scores and importance scores as shown by the evaluation of an airport's operational attributes. The larger a gap is, the more it will be considered.

2.5.3 Theories Related to Airport Customers

2.5.3.1 Decision Making Theory

Consumers have to evaluate resources and analyze goods and services before making a consumption decision. Several theories attempt to explain the process that consumers go through in order to arrive at a consumption decision. According to Goodwin, Nelson, Ackerman, and Weisskops (2008), consumers go through five steps

to arrive at a final consumption decision: problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behavior.

The price elasticity theory is one of the theories that explain how consumers make consumption decisions (Grote, & Matheson, 2011). Price elasticity is the responsiveness of consumers to changes in price (Oliveira-Castro, Foxall, & Schezenmaier, 2006). The price elasticity of a given consumer affects his consumption decision. According the price elasticity theory consumption decisions are characterized by trade-offs between preferences and budget income (Asamoah, & Chovancová, 2011). Since income is limited and there are numerous substitutes, the customer picks products that best suit his or her budget. Low income consumers select LCC services because these carriers offer the cheapest fare for a given route (Piga, & Bachis, 2006).

The risk preference theory also explains consumer behavior. According to this theory, consumers have varying degrees of tolerance toward risk. While some consumers have high risk propensity, others tend to avoid risks at all costs (Cheema, 2005). The risk preference of a given consumer will influence the decisions that this particular customer will make. Equity theory is also used to explain decision making by LCC passengers (Costanzo, 2013). Equity theory suggests that customers make decisions to purchase given products or services when they perceive that the ratio of input and output is fair. In this case, the consumer purchases the airline services when he feels that the services he will receive are worth the money charged (Bernett, 2003).

Another theory is the person-situation-fit concept (Costanzo, 2013). This theory suggests that consumers purchase a given service or product when they feel that the product or service matches their orientations and personalities. In this case, consumers purchase LCC services because they feel that these services match their orientations and personalities (Bray, 2008). This concept links consumer's decisions with the consumer's values, attitude, beliefs, and self-concept.

2.5.3.2 Psychological Theory

A number of psychological theories can also explain the behaviors of LCC consumers. The dissonance theory is one such theory (Bray, 2008). Dissonance theory suggests that people who receive services below their expectations tend to

recognize the disparity between expected services and perceived services leading to a state of discomfort (Costanzo, 2013). Consequently, the person tries to reduce this discomfort or dissonance by either adjusting his expectations or his perception of the services.

Another psychological theory that can explain the behavior of airport consumers is the contrast theory. Contrast theory contradicts the cognitive dissonance theory (Costanzo, 2013). The contrast theory suggests that when services fall below the expectation of a consumer, the consumer tend to exaggerate the discrepancy between the expected service and the perceived service. This will lead to an exaggerate reaction to the perceived services.

Psychologists have also attempted to explain consumer behavior by using the psychodynamic theory (Bernett, 2003). According to the psychodynamic approach, human behaviors are unconsciously influenced by biological factors (Bray, 2008). The psychodynamic model was heavily criticized, leading to the development of the behavioral theory. The behavioral theory suggests human behaviors are influenced by exterior factors such as social interaction and environment (Graham, & Isaac, 2002). Psychologists noted that, while behavioral theory played a significant role in explaining human behavior, it does not explain all aspects of human behavior. Consequently, the cognitive theory was developed (Bray, 2008).

The cognitive theory views a human being as an information processor and associate human behaviors to cognitive processes that enable a person to receive information, analyze it, and use it to make a decision (Asikainen, & Martinez, 2010). Processing information is affected by cognitive capacities of individuals in relation to motivation, emotion, thinking, memory, learning, and perception.

The most recent theory that explains human behavior is the humanistic theory. This theory attempts to describe individual consumers rather than take a generalized view about human behavior (Bray, 2008). One of the theories derived from humanistic psychology is the consumer core theory. The consumer core theory suggests that consumers' decisions are influenced by five chief variables: self-regulation, action intention, action desire, goal intention, and goal desire (Bagozzi,

2006). This implies that consumers' behaviors seek to move from an intention towards a desired goal.

2.5.3.3 Consumer Behavior Theory

Consumer behavior is the process and actions that lead to the purchase and use of a given product (Asamoah, & Chovancová, 2011). Understanding consumer behavior is vital as it enables an organization to develop effective marketing strategies. Consumers buying behaviors are mainly determined by the decisions that consumers need to make (Czudar, Ruwińska, & Ruck, 2007). For instance, the process that a given consumer may use to buy a pen may be significantly different from the process he may use to buy a house. In most case, consumers pay significant attention to decisions that entail expensive and infrequent purchases (Goodwin et al., 2008). It is critical for airports to understand the behavior of their consumers in order to make appropriate decisions concerning their services.

Utility theory is one of the significant theories that explain the behavior of consumers. The utility theory views consumers as rational economic beings who make decisions based on maximizing utility with minimal effort (Bray, 2008). In order to maximize utility, consumers must be aware of the availability of alternatives, be capable of rating each alternative, and select the optimum consumption option (Goodwin et al., 2008). However, (Bray, 2008) argues that this view is not valid as the rationality of consumers is often altered by factors such as values and social relationships.

Kotler, Amstrong and Wong's theory of consumer behavior suggest that consumers' actions are determined by the degree of differences among brands, degree of involvement, and rationality (Czudar et al., 2007). When the difference among brands is significant, consumers take a lot of energy to consider the options. He also engages in a high level of rationality when making decisions. For instance, when buying a house, the differences between available options are significant. Consequently, the level of involvement and rationality is expected to be high when making a purchase decision.

2.5.3.4 Motivation Theory

Motivation refers to the force behind actions or decisions made by individuals (Durmaz, & Diyarbakırlıoğlu, 2011). Maslow's Hierarchy of Needs is a significant theory that explains the motivation of consumers. According to Maslow's theory, consumers are characterized by a hierarchy of needs (Ward, & Lasen, 2009). The most basic needs are the physiological needs such as thirst and hunger. Human beings tend to prioritize these needs. Once the basic needs are met, the consumer begins to pursue the next level of needs referred to as safety needs. The third level of need comprises of social needs such as love, socialization, and sense of belongings (Atalık, & Özel, 2008). Consumers only pursue these needs once basic and security needs are met. The fourth level of needs is the need for esteem. At this level, the consumer's behaviors are driven by the need for recognition, appreciation, and status. The highest level of motivation is referred to as self-actualization (Goodwin et al., 2008). At this level, the consumer's decisions are driven by the need for realization and self-actualization.

Consumer motivation is also explained by the McClelland Theory. This theory suggests that human behaviors are driven by three chief factors: achievement, affiliation, and power (Echezuria, 2012). Achievement refers to the need to do something that warrants recognition. Services that allow consumers to stand out from the rest can be highly motivational. Affiliation refers to the need to belong to a given group. Consumers may be motivated to buy goods or services because they want to be part of something larger than themselves (McClelland, & Worthington, 2010). Power refers to the need to exert influence. Services that meet the power need of consumers are highly motivational.

2.5.4 Related Research on Airport Customers

2.5.4.1 Research on Low-Cost Carriers

The emergence of low-cost carriers drew a numbers of studies on low-cost carriers in relation to airports. Some issues found were high traffic volume, expansion of secondary airports, airport choice selection, and a developing

relationship between LCC and airports. Table 2.12 summarizes the research findings of various studies.

In the views of Vowles (2001), Francis et al. (2003), Barrett (2004) and Pyrialakou et al. (2012), low-cost carriers (LCC) such as Southwest Airlines play a significant role in airports by decreasing average airfares that help to reduce aeronautical charges by the airports, consequently increasing commercial revenues due to increase in the number of passengers and traffic. Similarly, David Gillen and Lall (2004), Pels, Njegovan, and Behrens (2009), and Lei and Papatheodorou (2010) depict that LCCs such as Southwest, Ryanair and EasyJet operate their businesses with great operational efficiency. They provide point-to-point service and focus on air fare, surface-access costs, and frequency to achieve competitive advantage. But at the same time, Francis et al. (2004) say that unwillingness of LCC to pay high airport charges can create difficulty for airports to increase reveneus.

Neelam (2004) and A. Zhang et al. (2008) have different views from the above researchers and raise the need for airports to expand their routes to Asian countries to cater to Southeast Asia's growing number of budget airlines. In support of this, de Neufville (2004) remarks upon the expansion of no-frills airlines towards secondary airports in major metropolitan areas. This provides opportunities for airports to provide low-cost service to these airlines by strengthening the role of secondary airports. But at the same time, de Neufville (2006) states that it has become difficult for the main airports to provide cost effective facilities to these LCCs due to their long-term obligations to provide high-quality facilities to the traditional airlines. Regarding this, (Jacobs Consultancy, 2007) describes new ways for airports such as incentive mechanisms by redeveloping existing facilities or building new facilities that can provide LCCs with competitive facilities and promote their growth considerably.

Table 2.12 Related Research on Low-Cost Carriers

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Themes
Vowles (2001)	The "Southwest Effect" in Multi-Airport Regions	Southwest-served multi-airport regions studied include Chicago, Washington, DC/Baltimore, Houston, and South Florida.	Secondary sources	This paper examines the role of Southwest Airlines in altering fares and passenger traffic and the Southwest Effect at airports in multi-airport regions.	Results of comparison between Southwest-served routes and non-Southwest-served competing routes show that there is influence of the Southwest Effect on those markets, which are not served by Southwest.	High Traffic Volume
Francis et al. (2003)	Airport—Airline Interaction: The Impact of Low-Cost Carriers on Two European Airports.	Two EU airports with less than one million passengers per annum	Case studies	This paper uses case studies to look at the impact of low-cost airlines on two European airports.	It is found that it is important for airport management to see both passengers and airlines as customers and to understand the resultant revenue streams, before negotiating preferential contracts with low-cost carriers.	High Traffic Volume
Francis et al. (2004)	Airports' perspectives on the growth of low-cost airlines and the remodeling of the airport-airline relationship	Low-cost airlines for airports	Qualitative examination of five airports	This paper explores the way in which airports have responded to the apparent opportunities afforded them by the growth of low cost airlines.	The growth of low-cost airlines in Europe has seemingly afforded airports with attractive revenue-generating opportunities.	High Traffic Volume
Barrett (2004)	How Do the Demands for Airport Services Differ between Full-Service Carriers and Low-Cost Carriers?	Low-cost carriers	Case studies	This paper explores the nature of the demand function for the services of LCCs and differentiates it form the more traditional European airlines.	There is considerable scope for further development of low-cost airports in Europe.	High Traffic Volume

Table 2.12 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Themes
David Gillen and Lall (2004)	Competitive Advantage of Low-Cost Carriers: Some Implications for Airports.	Southwest, Ryanair and easyJet	Secondary sources	In this paper, the sources of competitive advantage of low-cost carriers such as Southwest, Ryanair and easyJet are identified.	An airport with a dominant single low-cost carrier is subject to more risk and low bargaining power.	High Traffic Volume
Neelam (2004)	Singapore's Changi Airport To Build Terminal For LCCs	Changi Airport	Secondary sources	To examine the initiative of Singapore's Changi Airport to Build Terminal For LCCs	It would be effective for the airports to focus on cost effective terminals to attract LCCs in Asian market.	Expansion of Secondary Airports
de Neufville (2004)	Multi-Airport Systems in the Era of No-Frills Airlines	Metropolitan Regions	a worldwide database on major metropolitan airports	To analyze the role of the development of multi-airport systems in air planning.	The development of no-frills airlines is promoting a remarkable expansion in the number of secondary airports in major metropolitan areas.	Expansion of Secondary Airports
Warnock-Smith and Potter (2005)	An Exploratory Study into Airport Choice Factors for European Low-Cost Airlines	eight European low-cost airlines	Surveys of 10 UK based and 13 European Union (EU) based LCCs	This paper addresses this through an exploratory survey of eight European low-cost airlines.	The paper finds that demand for low-cost services is the most important choice factor, with aeronautical charges ranked fourth. Further analysis reveals different requirements depending upon airline characteristics.	Airport Choice Selection
de Neufville (2006)	Accommodating Low Cost Airlines at Main Airports	low-cost carriers in Europe	Secondary sources	This paper examines the issues of accommodating low-cost carriers at the main airports, which have typically been organized around the needs of the legacy carriers.	Put in terms of practical decisions, the question is whether airports should build low-cost passenger buildings and otherwise differentiate their offerings of services to airlines.	Expansion of Secondary Airports

Table 2.12 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Themes
Dobruszkes (2006)	An analysis of European Low-Cost Airlines and Their Networks	European Low-Cost Airlines	OAG databases	This study is focused on the analysis of European Low-Cost Airlines and Their Networks.	Result reveal that low-cost carriers give fresh impetus to point-to-point routes by drawing new networks complementing those of full service network carriers (FSNCs).	Airport Choice Selection
Jacobs Consultancy (2007)	Review of Dedicated Low-Cost Airport Passenger Facilities	Airport at Dublin	Secondary database	The purpose of this report is to review the developments at identified airports to understand the design and operating characteristics and the resultant impact on airline charges.	The report found that airports are keen to see the growth of low costs airlines but differences in current facilities provided for traditional or legacy carriers are not suitable for low cost airlines.	Expansion of Secondary Airports
E. Lin, Mak, and Wong (2008)	A Conceptual Framework of the Low Cost Carrier – Airport Relationship Development in Southeast Asia	LCCs and airports in Southeast Asia	Secondary data and personal interviews with executives from LCCs and airports	The purpose of this study is to explore the relationship development between Low Cost Carriers (LCCs) and airports in Southeast Asia.	Results show that there is a significant difference between the traditional airlines-airport relationship and the LCC-airport relationship as there is need to develop the LCC-airport relationship in different manner.	LCC-Airport Relationship Management
de Neufville (2008)	Low-Cost Airports for Low-Cost Airlines: Flexible Design to Manage the Risks	Low-Cost Airports and Low-Cost Airlines in Portugal	Secondary database	The aim of this research is to analyze the current risks, and indicate how flexible design could manage uncertainties and maximize expected value.	Flexible design allows the airport owners to adjust their facilities easily to changes in the location and needs of air transport.	LCC-Airport Relationship Management

Table 2.12 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Themes
A. Zhang et al. (2008)	Low-Cost Carriers in Asia: Deregulation, Regional Liberalization and Secondary Airports.	Low-Cost Carriers in Thailand and China	Secondary database	It examines the impact of Asia's domestic and international airline regulations and airport infrastructure on the performance of its LCCs.	It is found in research that the ''Southwest effect'' may also exist in Asia and that the development of low-cost terminals may compensate this effect.	Expansion of Secondary Airports
Pels et al. (2009)	Low-Cost Airlines and Airport Competition	Three airports outside the Greater London area: Birmingham (BHX), East Midlands (EMA) and Bristol (BRS).	The 2003 CAA Passenger Survey	This paper highlights the issue of the competition between full-service and low-cost airlines serving adjacent airports in the Greater London.	The results reveal that there are three key dimensions of passenger choice namely air fare, surface-access costs and frequency that are significant for LCCs to compete with full service airlines.	High Traffic Volume
Almeida (2010)	Low Cost Airlines, Airports and Tourism: The Case of Faro Airport	FARO AIRPORT	Secondary database	In this article, the aim is to demonstrate the changes in traffic structure and discuss its implications in the operations that lead to a redesign in the airport to attract passengers.	On data analysis, it is found that an airport can work towards improved levels of service and the adoption of better strategies for attracting traffic.	LCC-Airport Relationship Management
Lei and Papatheodorou (2010)	Measuring the Effect of Low-Cost Carriers on Regional Airports' Commercial Revenue	28 airports and LCCs in UK	The UKCAA	This paper measures the effect of LCCs on British regional airports' commercial revenue using panel data analysis.	The findings show that LCCs have significant impact on airports' commercial revenue, but their contribution is smaller as compared to other carriers.	High Traffic Volume

Table 2.12 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Themes
Hanaoka and Saraswati (2011)	Low Cost Airport Terminal Locations and Configurations	Low-cost terminals.	Secondary data	This research highlights the location and configuration of the dedicated terminal by considering the aircraft taxiing distance and passenger walking distance.	Result shows that time and cost efficiency can be affected due to the location of the terminal, rather than its configuration.	Airport Choice Selection
Pyrialakou et al. (2012)	Assessing Operational Efficiency of Airports With High Levels of Low-Cost Carrier Traffic	10 Greek airports	Official records of the Hellenic Civil Aviation Authority's (CAA) database	The research aim is to investigate the connection between airport efficiency and low-cost carriers.	Low-cost carrier traffic, with its highly seasonal characteristics, significantly affects efficiency findings.	High Traffic Volume
Abda, Belobaba, and Swelbar (2012)	Impacts of LCC Growth on Domestic Traffic and Fares at Largest US Airports	Top 200 airports in the US	The Origin and Destination Traffic Survey conducted by the US Department of Transportation Bureau of Transportation Statistics	The main focus of this study is to examine the evolution of domestic origin-destination air traffic and fares at the top 200 airports in the US between 1990 and 2008 and analyze the impacts of low-cost carrier entry and growth.	This research finds that the entry or substantial growth of LCCs at US airports has a significant impact on lowering average fares and stimulating passenger volumes.	Airport Choice Selection
Anne Graham (2013)	Understanding the Low Cost Carrier and Airport Relationship: A Critical Analysis of the Salient Issues	Low cost carriers (LCCs) and airports	Passenger, airlines and airport operator surveys and interviews, or in one case was from a Delphi technique which sought the views of a panel of industry experts and secondary database	This paper examines the relationship between low cost carriers (LCCs) and airports by undertaking a critical analysis of the academic research in this area.	The analysis shows that the nature of the airline-airport relationship has fundamentally changed due to the growth of the LCC sector as well as the commercialization of the airport industry	Airport Choice Selection

According to Warnock-Smith and Potter (2005), Abda et al. (2012) and Anne Graham (2013), the LCCs significantly prefer some airport factors such as the demand for niche and low cost services, convenient slot times for take offs and landings, and quick turnaround facilities that enable them to provide low-cost services to their customers. But, Hanaoka and Saraswati (2011) state that airports need to focus on cost and time efficiency to provide cost effective terminals to the LCCs. On the other hand, Dobruszkes (2006) describes how the Western European market provides a fresh drive to LCCs to access point-to-point routes by drawing new networks.

E. Lin et al. (2008) state that the LCC-airport relationship is different from the traditional airlines-airport relationship as there is need for the LCCs to devlop good relationships with airports and consider some factors such as power, dependence, and mutuality. de Neufville (2008) and Almeida (2010) depict that currently, the airport managers are focusing on the LCC-airport relationship in airport planning by considering their requirements, which are different from legacy carriers. Further, researchers suggest that airports need to adopt a flexible design strategy to enable the LCCs to effectively use the facilities.

The inclusion of low-cost carriers in the research is beneficial for the development of detailed understanding regarding the impact of LCCs on the airports. This could be helpful for airport managers to create new strategies to attract these carriers to increase revenues and profitability.

2.5.4.2 Research on Passengers

Research related to low-cost carrier passengers in relation to airports was reviewed, but very few studies were found. Most existing research on passengers was considered in association to low-cost carriers. However, some beneficial results and concepts are raised such as service perception, customer satisfaction, and customer loyalty (Table 2.13).

Table 2.13 Related Research on Low-Cost Carrier Passengers

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Theme
Mason (2000)	The Propensity of Business Travellers to Use Low Cost Airlines	European business travelers	A pilot study of 10 respondents	This paper, examines the inclination for business travellers to use low cost, low frills airlines in EU short haul markets.	Low-cost airlines would be more attractive to travellers working for small and medium sized companies, and provides original evidence of the effect of company size in the purchase decision process for short haul businessair travel	Service Perception
Mason (2001)	Marketing Low-Cost Airline Services to Business Travellers	London's Heathrow (full service carriers) and Luton airports (the low-cost airline easyJet)	Face to face interview of two groups of travelers	This paper compares the preference of business traveellers from small companies and lage companies regarding facilities in LCCs.	Business travelelrs from small compnaies prefer more inflight service, frequency and FFP points for lower fares than those from larger companies.	Service Perception
Yeh and Kuo (2003)	Evaluating Passenger Services of Asia-Pacific International Airports	14 major Asia-Pacific international airports	Surveys of Taiwanese passengers	This paper presents multi-attribute decision making approach for evaluating passenger service quality of 14 major Asia-Pacific international airports and establish a service benchmark for Chiang Kai-Shek international airport (TPE) in Taiwan.	The results show that airport should focus on six attributes such as comfort, processing time, convenience, courtesy of staff, information visibility and security to establish a benchmarkt to imporve the quality of its services.	Passenger Satisfaction
Ryan and Birks (2005)	Passengers and Low Cost Flights	Low-cost carrier flying across the Tasman between Australia and New Zealand	Questionnaire Survey of 1,297 respondents	This paper aims to cover issues related to the rating of attributes of airline service, assessment of airports and usage of regional tourism attractions by inbound passengers.	The findings reveal that low fares as well as features of airport such as check in procedures are significant factors in purchasing decision for LCCs passenger resulting in great impact on the local tourism.	Passenger Satisfaction

Table 2.13 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Theme
O' Connell and Williams (2005)	Passengers' Perceptions of Low Cost Airlines and Full Service Carriers: A Case Study Involving Ryanair, Aer Lingus, Air Asia and Malaysia Airlines	Aer Lingus and Ryanair operating in the mature European market, and Malaysia Airlines and Air Asia operating in the recently liberalized Malaysian domestic market	Surveys of passengers	The aim of this paper is to compare passengers' selection criteria between a full service airline anda low cost carrier in a mature European market andin a rapidly growing Asian economy.	Passengers travelling on full service carriers strongly emphasize on reliability, quality, flight schedules, connections, frequent flyer programmes and comfort, while travelers taking low cost carriers focus almost exclusively on fare.	Customer Loyalty
Torres et al. (2005)	Passenger Waiting Time in an Airport and Expenditure Carried out in the Commercial Area	Asturias Airport, a medium-sized airport in the north of Spain	Survey of travelers for holiday purposes and business	This research determines the relationship between the expenditure in the commercial area of an airport and the passenger waiting time to board.	The study finds that if the passengers spend more time in the airport, they are likely to consume more in commercial area.	Service Perception
Komsan Suriya (2006)	Airline Market Segments after Low Cost Airlines in Thailand: Passenger Classification Using Neural Networks and Logit Model with Selective Learning	Chiang Mai International Airport	Questionnaires for 468 Thai passengers of full-service airlines and low cost airlines	This study aims to classify and separate the passengers of LCAs or FSAs and determine the percentage of overlapping market by using prediction techniques namely Neural Networks and Logit Model.	By using prediction techniques, it is identified that 64 percent of Thailand's domestic air passenger transportation can be clearly separated into two dominant markets for full-service airlines and low cost airlines, but remaining 36 percent was related to the overlapping market segment including tourists.	Komsan Suriya (2006)

Table 2.13 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Theme
Czudar et al. (2007)	The Customers' Perception of Wizz Air. The Largest Low-Fare Cost Airline in Central Eastern Europe	Wizz Air in Central Eastern Europe	Secondary data and questionnaire survey of passengers	This study focuses on the evaluation of consumer behavior in the pressure of wide choice availability.	The results reveal that it is crucial for the airlines to adopt customer focused approach to improve their services and facilities to develop a large customer base.	Passenger Satisfaction
de Barros, Somasundaraswaran, and Wirasinghe (2007)	Evaluation of Level of Service for Transfer Passengers at Airports	Bandaranaike International Airport in Sri Lanka	Case study and survey	The main aim of this study is to analyze the views of transfer passengers on the quality of services at the terminal building.	The findings show that transfer passengers give more priority to the courtesy of the security check staff and the quality of the Flight Information Display.	Passenger Satisfaction
Atalık and Özel (2008)	Passenger Expectations and Factors Affecting their Choice of Low Cost Carriers: Pegasus Airlines	Pegasus Airlines	Face-to face interviews of 100 passengers	This study aims to determine the factors affecting the choice of low cost carriers' for travelers.	Twelve factors such as convenience of schedules, on time performance, safety, types of airlines, price, comfort, food and drinks, personnel behavior, airline images, baggage services, flight network and cabin services are identified as the choice factors for low cost carriers' passengers.	Passenger Satisfaction

Table 2.13 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Theme
Correia et al. (2008b)	Overall Level of Service Measures for Airport Passenger Terminals	Sao Paulo/ Guarulhos International Airport in Brazil	Questionnaires for passengers	This paper highlights the measures to evaluate overall level of service (LOS) in a single scale for airport passenger terminals.	The findings show that some important measures such as walking distance, processing time, waiting time, the number of seats and space available are effective to analyze the effectiveness of LOS of an airport passenger terminal.	Customer Loyalty
Castillo-Manzano (2010)	The City-Airport Connection in the Low-Cost Carrier Era: Implications for Urban Transport Planning	Seven different Spanish secondary airports	Interview of 20,383 passengers, 6247 of whom were LCC passengers	This article analyzes differences between the behavior of passengers of low-cost and network airlines when choosing their transport mode for travel to airports.	It is found that a passenger of a LCC is more likely to drive a rented car or use public transport than a user of a network carrier.	Service Perception
Diggines (2010)	Passenger Perceptions and Understanding of the Low-Cost and Full-Service Airline Model in South Africa	Two full-service carriers, and the three low-cost carriers operating at Cape Town and Johannesburg international airports in South Africa	Interview of passengers	The study aims to develop understanding of the perceptions South African passengers related to the choice between the low-cost carrier and the full-service carrier, when deciding to fly.	Low-cost passengers have highly favorable perception for fares, while quality and safety are big issues for full-service passengers rather than fare.	Customer Loyalty
Forgas, Moliner, Sanchez, and Palau (2010)	Antecedents of Airline Passenger Loyalty: Low-Cost versus Traditional Airlines	El Prat (Barcelona) Airport involving two traditional airlines: Iberia and British Airways and one low-cost carrier,	Questionnaires for passengers	This study is based on the identification of the antecedents of airline user loyalty.	The results show that the principal antecedent of passenger loyalty are emotional value and trust that are effective to generate most satisfaction and develop relationships between the LCCs and its users.	Customer Loyalty

Table 2.13 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Theme
Edwards (2011)	Key Characteristics and Attitudes of Airline Passengers with Particular Emphasis upon the Low-cost Sector: Implications for Pre-Trip Decision-Making and Airline Choice	The airside departure lounges Birmingham Airport (BHX)	Structured-interviews conducted with 490 passengers	This research seeks to determine key characteristics and attitudes of LCC airline passengers towards an airline choice.	In the research, it is identified that socio-demographic situational factors have a great impact on decision-making and choice processes.	Service Perception
Kouhpaei (2011)	Airfare Price Elasticity over Non-Business Passengers	LCCs	Questionnaire for passengers	This paper aims to analyze the ticket market and identify the behavior of the customers and their response to this market.	Some factors such as reliability, transit time, and personal space on aircraft, catering and airport access can affect customer's attitudes to the price of the purchasing ticket.	Passenger Satisfaction
Marcucci and Gatta (2011)	Regional airport choice: Consumer behaviour and policy implications	A multi-airport region in central Italy	Interview of passengers	The main purpose of this research is to estimate the importance of the different attributes that determine origin airport choice.	Leisure passengers are more interested in low-cost carriers, while business passengers are more loyal to the previously chosen airport.	Passenger Satisfaction
Martínez-Garcia et al. (2012)	Profile of Business and Leisure Travelers on Low Cost Carriers in Europe	Catalonia, one of Europe's most popular tourist destinations	Survey of tourists	The purpose of this study is to analyze the differences between business and leisure travelers flying by low cost airlines.	The emergence of LCCs has a significant impact on the changes in air travel demand by making price more considerable factor in carrier choice. In addition, LCCs can attract business travelers by often offering much lower prices with some trip attributes.	Customer Loyalty

Table 2.13 (Continued)

Authors (year)	Topics	Research Setting	Data Sources / Respondents	Research Aims / Highlights	Significant Results	Theme
Sittichai Charoensettasilp and Wu (2013)	Attitude and Needs of Thai People in Selecting Domestic Low-Cost Airlines	Thai people living in Bangkok and used to travel by airlines	Questionnaire for 400 travelers	This research focuses on the determination of attitude and needs of Thai people in selecting domestic low-cost airlines.	Results show that there is a significant impact of service marketing mix (7P's) on attitude and needs of Thai people in selecting domestic low-cost airlines	Service Perception
Wittman (2013)	Are Low Carrier Passengers Less Likely to Complain about Service Quality?	Network legacy carriers and LCCs of USA	The Air Travel Consumer Report (ATCR)	This paper is aimed to test whether network carrier passengers are more likely to make a complaint about the service quality failure than LCC passenger.	Passengers of low-cost carriers like Southwest Airlines are less likely to complain about service quality than passengers of network carriers like American Airlines due to price based expectations, lack of information and qualitative differences.	Passenger Satisfaction

According to Mason (2000) and Edwards (2011), business travelers are likely to use short haul, low cost airlines with consideration to price, airline reward schemes, flight frequencies, and in-flight comfort. Further, they show that price is the most important purchasing factor, followed by in-fight comfort, and then flight frequency. Further, Mason (2001) reveals that business travelers, who work for small companies prefer more in-flight services, frequency, and frequent flying program (FFP) points for subsequently lower fares than those working for larger companies.

As per Torres et al. (2005), passengers are interested in purchasing more products and services waiting times to board increase. Komsan Suriya (2006) and Sittichai Charoensettasilp and Wu (2013) explain the significance of market segmentation and marketing mix strategies in targeting potential customers by changing their attitude and perceptions in airline choice. Castillo-Manzano (2010), shows that LCC passengers prefer a rented car or public transportation when travelling to airports due to their price consciousness, while network carrier passengers are likely to choose a taxi to go to the airport.

In the views of many authors (de Barros et al., 2007; Ryan, & Birks, 2005; Yeh, & Kuo, 2003), airports should design their quality development programs for LCC passenger services by focusing on various attributes such as comfort, price, food and drinks, brand image, baggage services, flight network, cabin services, processing time, convenience, courtesy of staff, information visibility, check-in procedures and security to improve customer satisfaction. It is crucial for airports management to adopt customer oriented practices to achieve rapid growth in the international market (Atalık, & Özel, 2008; Marcucci, & Gatta, 2011). At the same time, various researchers (Czudar et al., 2007; Kouhpaei, 2011; Wittman, 2013) find that for improving customer satisfaction and increasing traffic, management needs to focus on evaluating service quality relative to competitors, based on customers' perceptions of service attributes and reduce customer complaints regarding service.

Many researchers (Martínez-Garcia et al., 2012; O'Connell, & Williams, 2005) suggest that it is ideal for airports to provide a combination of some low fares provided by LCCs and some full service products and services offered by the incumbent airlines, to allure more LCC passengers. On the other hand, Correia et al. (2008b) raise the need to measure overall level of service at passenger terminals to

develop customer loyalty. Related to this, (Diggines, 2010) states that full service carrier (FCC) passengers are more loyal than LCC passengers because FCC are not price sensitive and do not switch to low cost carrier even when prices of FCCs increase. Being price sensitive, LCC passengers are likely to switch to FCC due to price reduction. In contrast to this, Forgas et al. (2010) depict that LCC passengers are more oriented towards emotional values, trust, and brand loyalty, while conventional airlines put more importance on the professionalism of the personnel.

Therefore, it can be concluded that the focus on low-cost carrier passengers is significant for this study to understand how to significantly increase their satisfaction level and brand loyalty. Previous researches were based on LCCs, but in this part of the research, it would be beneficial to analyze the perceptions of LCC passengers to achieve higher airport operational efficiency.

As this research was planned to retrieve data from passengers of the low-cost carriers, related variables on passengers are also reviewed. To collect data on passengers' perception of low-cost airlines, different researchers looked at an array of variables. Somprattana Samintarapanya (2010) included age, gender, education, occupation, income, and marital status into the study (Chalermkiart Feongkeaw, 2007; Correia et al., 2008a, 2008b; O'Connell, & Williams, 2005; Ryan, & Birks, 2005). Whereas Ryan and Birks (2005) adopted residence as another variable to study air passengers.

To collect data from air passengers, Paisit Piriyapong (2011) employed seven socio-demographic variables into a study of passenger and staff satisfaction of airport service quality by comparing expectations and perceptions at Suvarnabhumi Airport. Similar to various research, the study of Paisit Piriyapong (2011) put age, gender education, occupation, income, residence and marital status into his study (Athas Rerkpatima, 2008; Chalermphon Kitrungruang, 2011; Duangjai Jamjang, 2009; Nattaya Prasertsuwan et al., 2001; Phanuphong Phong-Ngam, 2010; Saengarun Saengsuda, 2011; Somkiet Naiwikul, 2008; Suthon Prakobpetch, 2005; Tana Kanjanasirikul et al., 2007). Refer to table 2.13 for an overview of the variables that were included in past studies.

However, Thailand airports concern all religious people, since the airports provide religion concerns called prayer rooms (AOT, 2014e, 2014f, 2014g, 2014h). Thus, religion is another socio-demographic variable to be used in this research, as it may have effects on some other airport services. Finally, there are eight socio-demographic variables used in this research: 1) Gender, 2) Age, 3) Education, 4) Occupation, 5) Income, 6) Residence, 7) Marital status, and 8) Religion (Table 2.14).

Besides socio-demographic factors necessary to the research, behavioral factors are crucial to study air passengers. O' Connell and Williams (2005) consider some behavioral variables of passengers including travel experience, surface transportation, travel arrangements, and experiences on air transport (Chalermkiart Feongkeaw, 2007; Yeh, & Kuo, 2003). In terms of airports, behavioral factors can differentiate airport service efficiency. Fodness and Murray (2007) proposed that cultural differences and trip characteristics (Yeh, & Kuo, 2003) are crucial factors to be considered. In addition, the views of Correia et al. (2008a) and Paternoster (2008) also support that customer experiences influence airport evaluation whereas Duangjai Jamjang (2009) and Francis et al. (2003) raised the time used at airports as another important factor.

Similar to the literature reviewed, this researcher has grouped various variables into four main variables associated to passengers' behaviors. The four variables used in this research comprise of 1) Experiences on sites, 2) Accompanying groups, 3) Experiences on air transport, and 4) Experiences at airports. There are relevant proxies identified for each variable as shown on Table 2.15.

2.6 Thailand Airports

2.6.1 Thailand Airport Operators

Since 1963, Thailand has altered 30 airfields that were used for military' missions, serving both the military and civil aviation (Department of Civil Aviation, 2011). The adaptation causes Thailand civil aviation to be continuously progressive. In 1979, Royal Thai Air Force had transferred the administration of Don Mueang

Table 2.14 Socio-Demographic Variables on Passengers Used in Previous Research

Authors (Year)	Topics	Age	Gender	Education	Occupation	Income	Residence	Marital Status
Passengers and Airlines								
Ryan and Birks (2005)	Passengers and Low Cost Flights	✓		✓	✓	-	✓	-
Chalermkiart Feongkeaw (2007)	Corporate and Brand Image of Low Cost Airlines	✓	✓	✓	✓	-	-	-
Somprattana Samintarapanya (2010)	An Opinion Study of Passengers towards the Services of Low Cost Airlines at Chiang Rai International Airport	✓	✓	✓	✓	✓	-	✓
Passengers and Airports								
Nattaya Prasertsuwan et al. (2001)	A Study of Passenger Satisfaction at Chiang Mai International Airport	✓	✓	✓	✓	-	-	-
Suthon Prakobpetch (2005)	Study of Customer's Satisfaction to Services in the Airport of Thailand Public Company Limited	✓	✓	✓	✓	-	-	-
Tana Kanjanasirikul et al. (2007)	Passenger Satisfaction on Suvarnahbumi Airport' Service	✓	✓	✓	✓	-	-	-
Athas Rerkpatima (2008)	Service Quality at Suvarnabhumi International Airport from the Viewpoint of Thai Passengers	✓	✓	✓	✓	✓	✓	-
Somkiet Naiwikul (2008)	Satisfaction of the Airport Users on the Service of Ubon Ratchathani International Airport, Thailand	✓	✓	✓	✓	-	-	-

Table 2.14 (Continued)

Authors (Year)	Topics	Age	Gender	Education	Occupation	Income	Residence	Marital Status
Duangjai Jamjang (2009)	The Study of Customer's Requirements on Public Services of Chiang Rai International Airport	✓	✓	✓	✓	✓	-	-
Phanuphong Phong-Ngam (2010)	Relationship between Service and Satisfaction of Domestic Customers at Suvarnabhumi Airport	✓	✓	✓	✓	✓	-	-
Chalermphon Kitrungruang (2011)	Passengers' Satisfactions with Suvarnabhumi Airport's Services Bangkok.	✓	✓	✓	✓	✓	-	-
Paisit Piriyapong (2011)	An Evaluation of Passenger and Staff Satisfaction in Airport Service Quality by Comparing Expectation and Perception: The Example of Suvarnabhumi International Airport, Bangkok, Thailand	✓	✓	✓	✓	✓	✓	✓
Saengarun Saengsuda (2011)	Customers' Satisfactions Towards Indicators on Security of Chiang Rai International Airport	✓	✓	✓	✓	-	-	-

Table 2.15 Passenger Behavioral Variables Used in the Research

Variables	Authors (Years)	Related Proxies
1. Experiences on sites	(Brilha, 2008; Correia et al., 2008a; Komsan Suriya, 2006; O' Connell & Williams, 2005; Ryan & Birks, 2005; Yeh, & Kuo, 2003)	1) Purpose of trip 2) Number of visits 3) Transportation
2. Accompanying groups	(O'Connell & Williams, 2005)	4) Accompaniment 5) Group size 6) Travel arrangement
3. Experiences on air transport	(Albers et al., 2005; Chalermkiart Feongkeaw, 2007; Correia et al., 2008a; Komsan Suriya, 2006; O'Connell & Williams, 2005; Ryan & Birks, 2005; Yeh, & Kuo, 2003)	7) Reasons of choosing air transport 8) Frequently used airlines 9) Number of annual flights
4. Experiences at airports	(Correia et al., 2008a; Duangjai Jamjang, 2009; Francis et al., 2003)	10) Number of arrivals and departures at the airport 11) Numbers of times flown with specific airlines at the airport 12) Time used for departure 13) Time used for arrival

International Airport to be under the control of a public enterprise called Airports Authority of Thailand or AAT (AOT, 2012b; Department of Civil Aviation, 2011). Later on, the Department of Civil Aviation transferred four regional airports to the responsibility of AAT. In 1988, Chiang Mai International Airport, Hat Yai International Airport and Phuket International Airport were formally transferred. Mae FahLuang Chiang Rai International Airport was transferred to AAT in 1998 (AOT, 2014b). In 2002, Airport Authority of Thailand changed its status to a public company limited under the name of Airports of Thailand Public Company Limited or AOT. Also, the opening of Suvarnabhumi Airport on September 28, 2006 was initially operated by AOT as well. In Thailand, not only a public enterprise but government sectors and private company are involved in operating airports.

According to Department of Civil Aviation (2014a, 2014b) and AOT (2014c), there are 35 Thailand airports still operating for civil aviation in 2013. The 35 airports are dispersed to parts of Thailand as shown in Figure 2.5. These airports include one international airport operated by Royal Thai Navy, three privatized airports operated by Bangkok Airways Public Company Limited, six international airports operated by AOT, and 25 airport**s** operated by Department of Civil Aviation—DCA, summarized in Table 2.16.

Royal Thai Navy, Ministry of Defense, has authorized U-Tapao–Rayong–Pattaya International Airport (UTP) since 1966 for military purposes. The UTP had always been a staging base for the SAC B-52 bombers, giant eight-engine bombers which are the backbone of the US Air Force from 1967-1976. Since 1976, Royal Thai Navy has operated UTP as a secondary airport following Don Mueang International Airport. Later, with the cooperation with Department of Civil Aviation, the airport has been developed and currently became a civil airport operating scheduled domestic and international flights (U-tapao-Rayong-Pattaya International Airport, 2014).

Bangkok Airways Public Company Limited, the first private aviation company in Thailand, initially began charter services as Sahakol Air in 1968 and operated the first private-owned domestic flight in 1986. In addition, Bangkok Airways also invested in building and maintaining three of its own privately-operated airports at Samui (1989), Sukhothai (1996), and Trat (2002). These developments provided

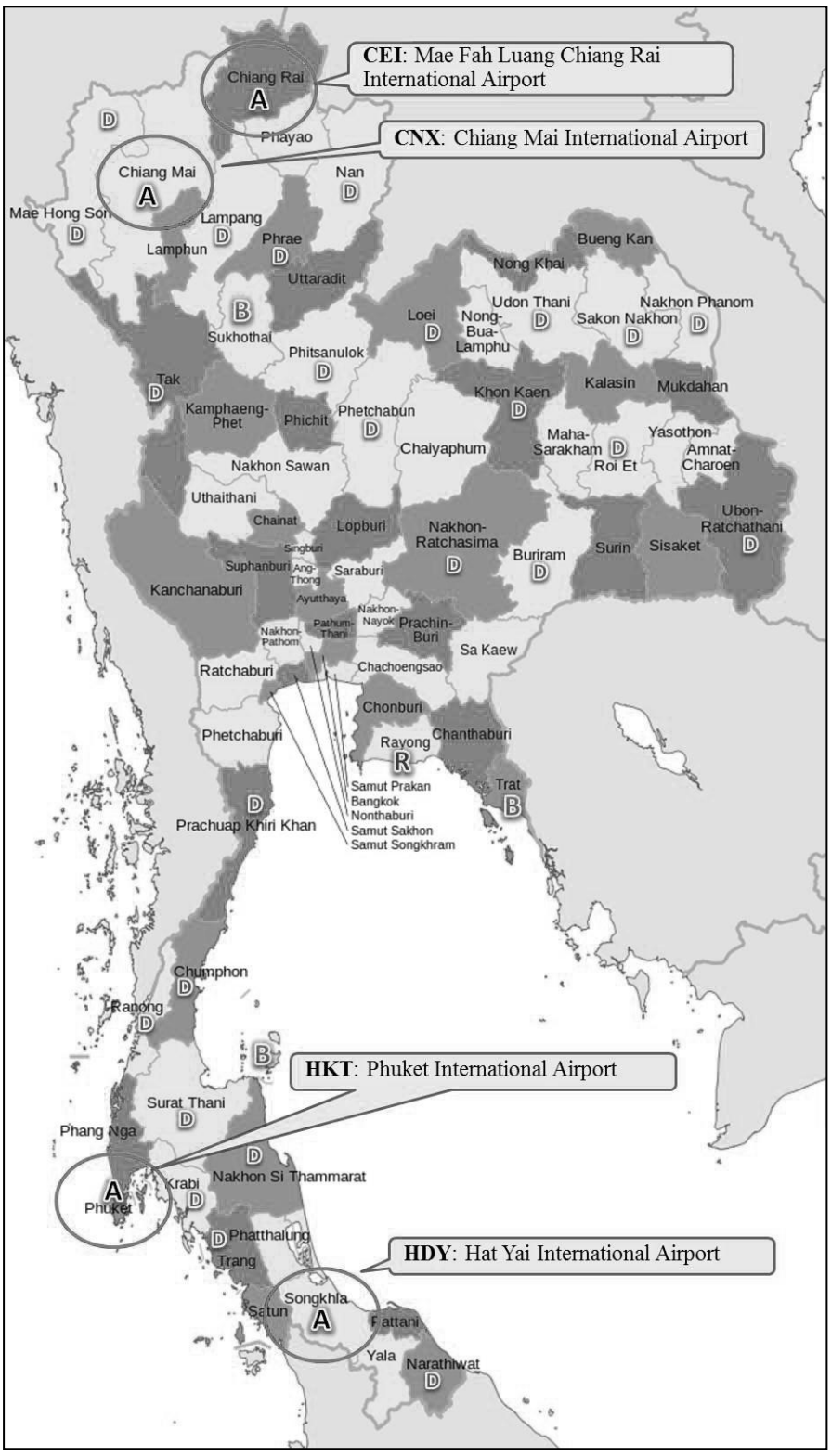


Figure 2.5 Locations of Airports Being Operated in Thailand in 2013

Note: A: AOT; B: Bangkok Airways; D: DCA; R: Royal Thai Navy

Table 2.16 List of Operators and Airports Operated in 2013

Airport Operators	Airports	IATA Code
Royal Thai Navy (1 airport)	U-tapao-Rayong-Pattaya International Airport	UTP
Bangkok Airways (3 airports)	Samui International Airport	USM
	Sukhothai Airport	THS
	Trat Airport	TDX
AOT (6 airports)	Suvarnabhumi Airport	BKK
	Don Mueang International Airport	DMK
	Phuket International Airport	HKT
	Hat Yai International Airport	HDY
	Chiang Mai International Airport	CNX
	Mae FahLuang Chiang Rai International Airport	CEI
DCA (25 airports)	Buri Ram Airport	BFV
	KhonKaen Airport	KKC
	Loei Airport	LOE
	NakhonPhanom Airport	KOP
	NakhonRatchasima Airport	NAK
	Roi Et Airport	ROI
	SakonNakhon Airport	SNO
	UbonRatchathani Airport	UBP
	UdonThani Airport	UTH
	Lampang Airport	LPT
	Mae Hong Son Airport	HGN
	Nan Airport	NNT
	Pai Airport	PYY
	Phetchabun Airport	PHY
	Phitsanulok Airport	PHS
	Phrae Airport	PRH
	Chumphon Airport	CJM
	Krabi Airport	KBV
	Nakhon Si Thammarat Airport	NST
	Narathiwat Airport	NAW
	Ranong Airport	UNN
	SuratThani Airport	URT
	Trang Airport	TST
	Mae Sot Airport	MAQ
	HuaHin Airport	HHQ

Source: DCA, 2014a, 2014b; AOT, 2014b.

Thailand with more air transportation nodes in order to facilitate the increase of air traffic volume (Bangkok Airways Public Company Limited, 2014).

Department of Civil Aviation (DCA) is another important airport operator in Thailand. DCA is a government agency with obligations to promote, develop, and regulate civil aviation activities of Thailand. Its main roles and responsibilities comprise of implementing the Air Navigation Act, promoting and developing national civil aviation, executing orderly civil aviation, making airports under jurisdiction available for the public, and coordinating with the domestic and international organizations (Department of Civil Aviation, 2014d). Currently, DCA controls 28 airports. DCA airports compose of nine airports in the Northeast, eight airports in the North, eight airports in the South, and three airports in the West of Thailand (Department of Civil Aviation, 2014c). From the statistics, however, Tak airport, Mae Sariang Airport, and Pattani Airport have not provided any civil flights for a year. As mentioned earlier, DCA operated 25 airports in the year 2013 (Department of Civil Aviation, 2014a).

Among 34,843,693 domestic passengers using scheduled airlines at 32 airports in 2012 (three DCA airports: Pitsanulok, NakhonRatchasima, and HuaHinairports, are excluded), AOT, which operates six international airports, showed the highest percentage at 78.03% (27.18 million) in serving domestic passengers while the 25 airports operated by Department of Civil Aviation (DCA) served only 16.66 %. The other 5.09% and 0.22% were served by Bangkok Airways Company Limited and Royal Thai Navy, respectively. Figure 2.6 displays a breakdown of civil aviation. AOT had the opportunity to serve more than three fourths of all domestic passengers. Suvarnabhumi Airport served 32.61% of Thailand’s domestic passengers in 2012. Excluding Suvarnabhumi Airport and Don Mueang International Airport which are both located in a metropolitan area, four regional airports operated by AOT served 32.13% of Thailand’s domestic passengers in 2012 (Ministry of Transport, 2013a).

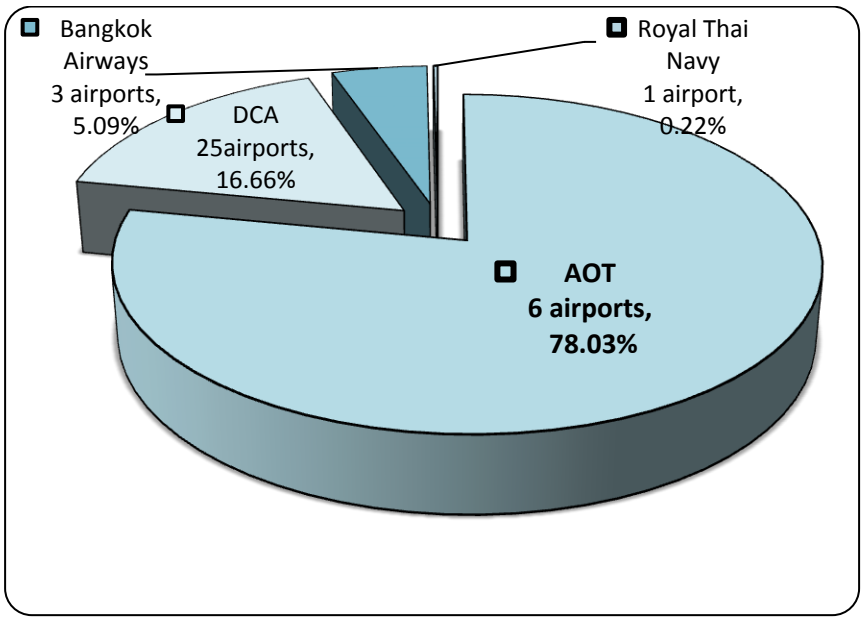


Figure 2.6 Percentage of Thailand Domestic Passengers Served by Four Airport Operators in 2012

Source: MOT and AOT (AOT, 2013a; Ministry of Transport, 2013b)

Since Airports operated by Thailand Public Company Limited has shown the highest potential to support domestic flights and domestic passengers in Thailand, this study specifically focuses on airports of AOT. One essential reason of selecting the chosen airports is the opportunity to access and retrieve data from both primary and secondary sources. Among six airports, however, Suvarnabhumi Airport and Don Mueang International Airport are exceptions in terms of scale, location, and service pattern. Suvarnabhumi Airport is a first-class international airport of which the primary aim is being the Aviation Hub of Asia (AOT, 2011c). Suvarnabhumi is the biggest airport in Thailand as well. Prior to 2012, Don Mueang, Thailand's first international airport had served all markets including both full-service carriers and low-cost carriers but operations were suspended since the launching of the newer Suvarnabhumi Airport in 2006. Due to the high congestion of Suvarnabhumi Airport, Don Mueang began to serve domestic scheduled flights again in 2007. In October 2012, Don Mueang International Airport has been operated to serve only the low-cost

carriers or accommodate point-to-point domestic and international flights (AOT, 2014b) and so its operation is dissimilar to the other four airports.

Thus, four airports (Phuket, Hat Yai, Chiang Mai, and Mae FahLuang Chiang Rai) are included in this dissertation as representative of 'Thailand Airports'. Additionally, these four airports have a high volume of domestic aircraft movements and domestic air passengers, including both full-service and low-cost carriers.

2.6.2 Air Traffic Statistics of Thailand Airports

On average, numbers of both international and domestic passengers using low-cost carriers have been ceaselessly increasing. Nearly 20% of international passengers and more than 50% of total domestic passengers traveled with low-cost carriers in 2013 at all six airports operated by AOT (Figure 2.7) (AOT, 2014d). The numbers show that low-cost carriers play a more important role on domestic routes than international ones.

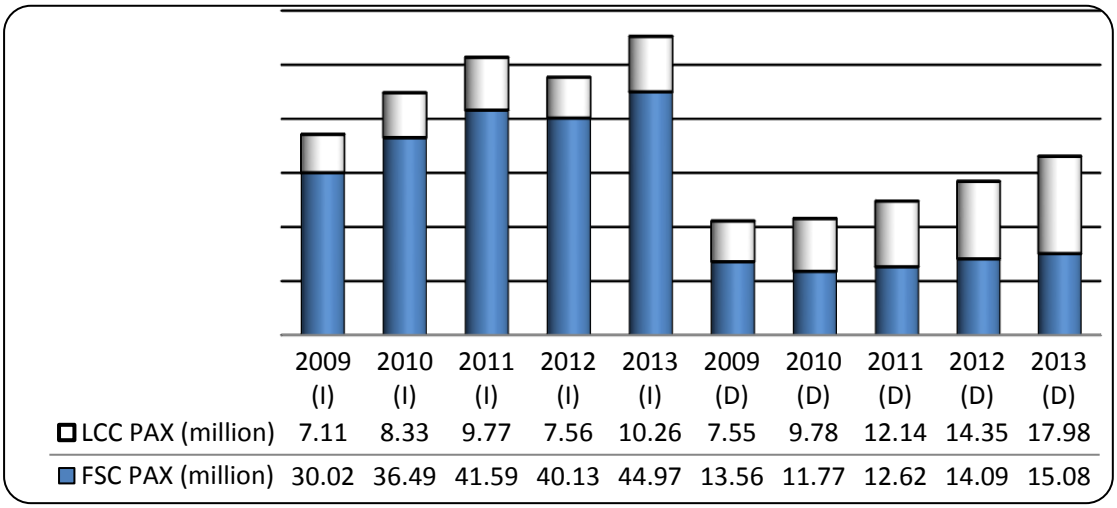
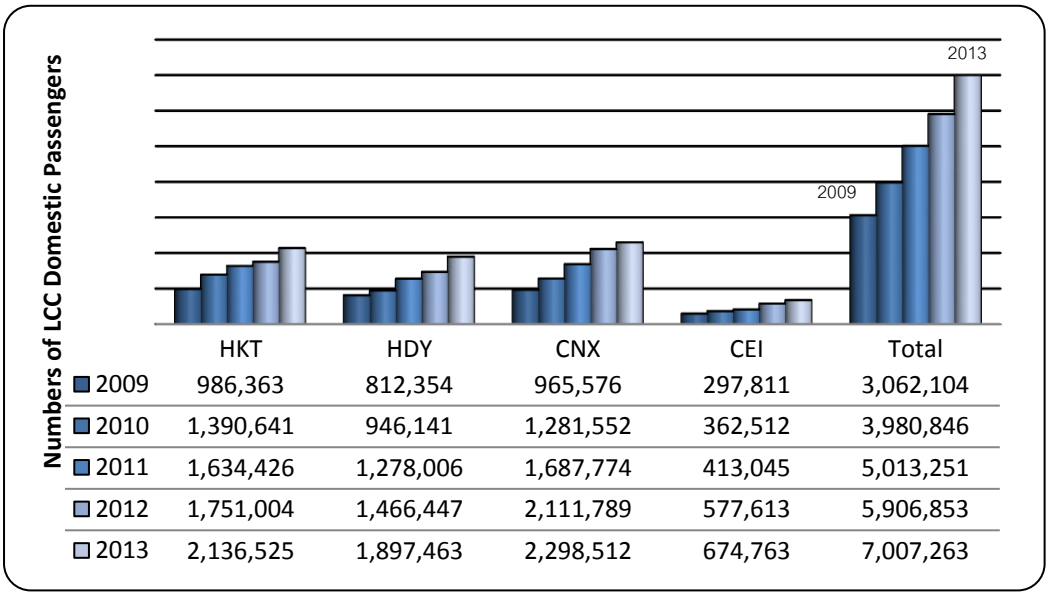


Figure 2.7 International and Domestic LCC Passengers Share and Growth at AOT Airports

Source: AOT, 2010, 2011a, 2012a, 2013a, 2014d.

Note: (I): International; (D): Domestic

As passengers mainly use Suvarnabhumi Airport and Donmueang International Airport, more detailed figures will later clearly depict to the other four airports: Phuket, Hat Yai, Chiang Mai, and Mae FahLuang Chiang Rai. Excluding Suvarnabhumi Airport and Don Mueang International Airport, other airports are able to show the development of low-cost carrier market. The growing tendency of LCC passengers at each airport is evident. Thus, total amounts of LCC passengers have been increasing every year. The 5-year growing rate (2009-2013) achieved more than 100% growth at all airports (AOT, 2010, 2011a, 2012a, 2013a, 2014d) (Figure 2.8).



	HKT	HDY	CNX	CEI	Total
2009	986,363	812,354	965,576	297,811	3,062,104
2010	1,390,641	946,141	1,281,552	362,512	3,980,846
2011	1,634,426	1,278,006	1,687,774	413,045	5,013,251
2012	1,751,004	1,466,447	2,111,789	577,613	5,906,853
2013	2,136,525	1,897,463	2,298,512	674,763	7,007,263

Figure 2.8 Domestic LCC Aircraft Movements at 4 AOT Airports in 2009-2013
Source: AOT, 2010, 2011a, 2012a, 2013a, 2014d.

Among domestic passengers in 2013, Chiang Mai International airport and Phuket International Airport each generated above 2 million LCC passengers which is close to the number of full-service passengers. The total domestic passengers of Hat Yai International Airport and Mae FahLuang Chiang Rai International Airport are small compared to those of Phuket and Chiang Mai. LCC passengers constituted a huge proportion to total passengers. In the year 2013, more than 80% and more than 60% of domestic passengers used low-cost carriers, at Hat Yai and Mae FahLuang Chiangrai, respectively. In the same year, ChinagRai International Airport served

almost 1 million LCC passengers whereas the other three airports handled about 2 million (Figure 2.9) (AOT, 2010, 2011a, 2012a, 2013a, 2014c, 2014d).

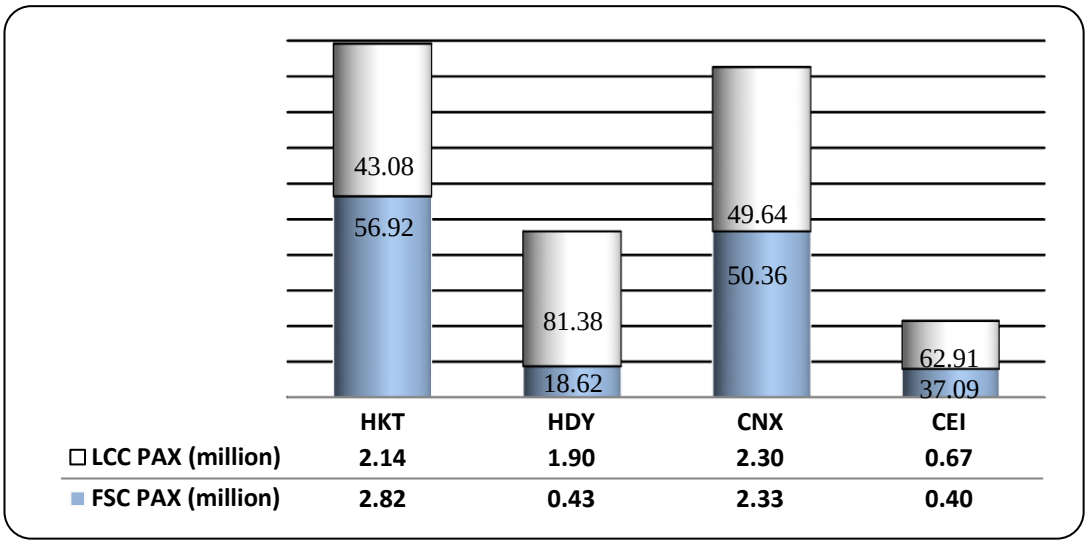
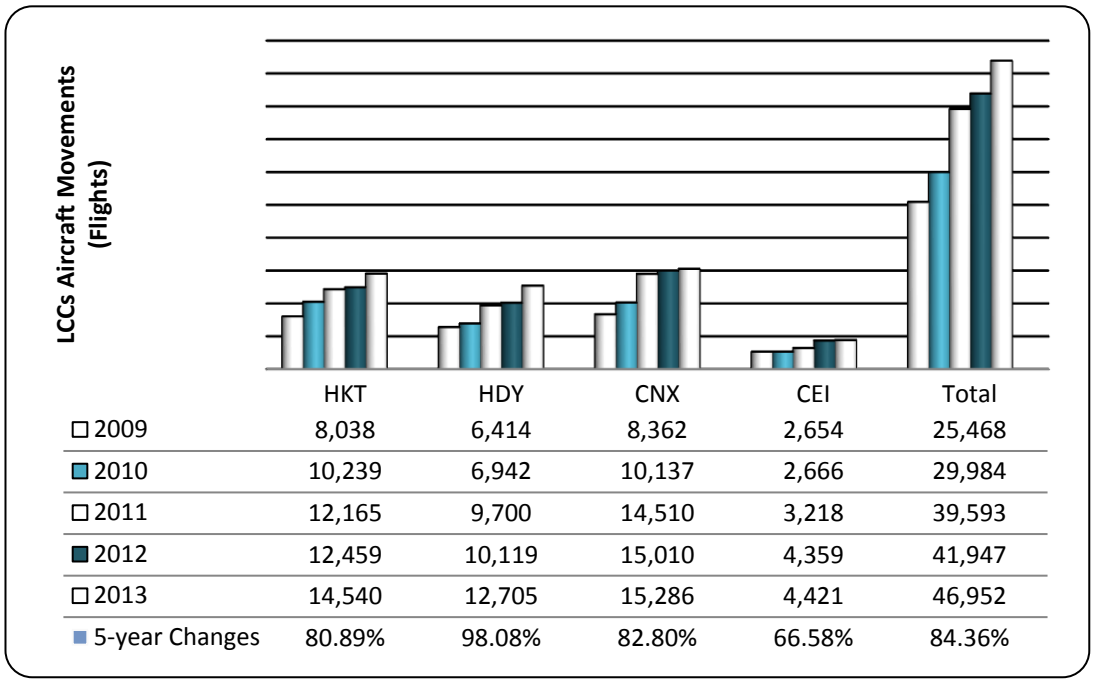


Figure 2.9 Proportion of Full-Service Carrier Passengers and Low-Cost Carrier Passengers on Domestic Flights in 2013

Source: AOT, 2010, 2011a, 2012a, 2013a, 2014c, 2014d.

Domestic routes within Thailand experienced an increase in not only LCC passengers but also LCC aircraft during 2009 to 2013. Numbers of flights at four major airports of AOT have positively grown each consecutive year. The 5-year growth is above 60%. Phuket (HKT), Hat Yai (HDY), and Chiang Mai (CNX) have reached changes above 80% whilst Mae FahLuang Chiang Rai generated growing rates of 66.58% (Figure 2.10) (AOT, 2010, 2011a, 2012a, 2013a, 2014d).



	HKT	HDY	CNX	CEI	Total
2009	8,038	6,414	8,362	2,654	25,468
2010	10,239	6,942	10,137	2,666	29,984
2011	12,165	9,700	14,510	3,218	39,593
2012	12,459	10,119	15,010	4,359	41,947
2013	14,540	12,705	15,286	4,421	46,952
5-year Changes	80.89%	98.08%	82.80%	66.58%	84.36%

Figure 2.10 Domestic LCC Aircraft Movements at 4 AOT Airports in 2009-2013
Source: AOT, 2010, 2011a, 2012a, 2013a, 2014d.

2.6.3 Thailand Airport Operation

According to AOT (2011b), the Airports of Thailand Public Company Limited (AOT) was corporatized from a state enterprise, namely Airports Authority of Thailand (AAT), to be a public limited company on September 30, 2002. AOT is a leader of Thailand's airport business operators. The vision of AOT is to be 'Asia's Leading Airport Business'. Its main business lines are managing, operating, and developing airports. AOT is responsible for six international airports: Don Mueang, Phuket, Chiang Mai, Hat Yai, Mae FahLuang Chiang Rai and Suvarnabhumi, all of which accommodate both domestic and international flights. With the opening of commercial operations on September 28, 2006, Suvarnabhumi Airport serves as the main airport, replacing Don Mueang International Airport, which was unable to accommodate the overwhelming growth in air traffic. Suvarnabhumi Airport ca accommodate up to 45 million passengers and 3 million tons of cargo per year. Within a single hour, the airport can operate up to 76 Flights.

The Mission Statement of AOT is that ‘Every airport under AOT management will be operated with an exceptional service standard and be equipped with service oriented personnel as well as the right technology for each customer group. AOT intends to accomplish this without compromising our accountability to all stakeholders including surrounding community, society and environment.’ To achieve the mission of being an aviation hub in Southeast Asia, AOT has followed two main streams which are 1) airport development for competitiveness and 2) airport development in national logistic systems. The commencement of Suvarnabhumi Airport is a significant strategy in increasing national competitiveness. The airport, which is highly equipped with standard facilities and technology, is a gateway attracting flights worldwide to Southeast Asia. Moreover, the ASEAN Economic Community (AEC) is another challenge for AOT to compete with other countries in the region (AOT, 2014b). Another stream is about national development. A free zone for cargo management, and freight transportation at Suvarnabhumi Airport, can boost freight transportation for Thailand. Not only Suvarnabhumi Airport but regional airports in both north and south of Thailand are crucial for tourism and logistic networks within Thailand and with other neighboring countries.

AOT's main revenue derives from: (a) aeronautical revenue consisting of landing charges, parking charges, passenger service charges, and aircraft service charges, and (b) non-aeronautical revenue consisting of concession revenue, office and realty property rents, and service revenues. In managing airport operations, AOT has contracted external operators to provide some required ground services for passengers. They are, for example, Thai Airways International Public Company Limited and Thai Airports Ground Services Company Limited. Operators of retail shops, warehouse facilities, limousines, parking services, and other conveniences have to pay concession fees, rent and service charges. Other non-contract tenants running services within AOT airports pay rent and service charges to the AOT.

In terms of AOT management structure (Figure 2.11), there are five committees under the Board of Directors. The five committees comprise of 1) Nomination Committee, 2) Remuneration Committee, 3) Corporate Governance Committee, 4) Risk Management Committee, and 5) Audit Committee. The president

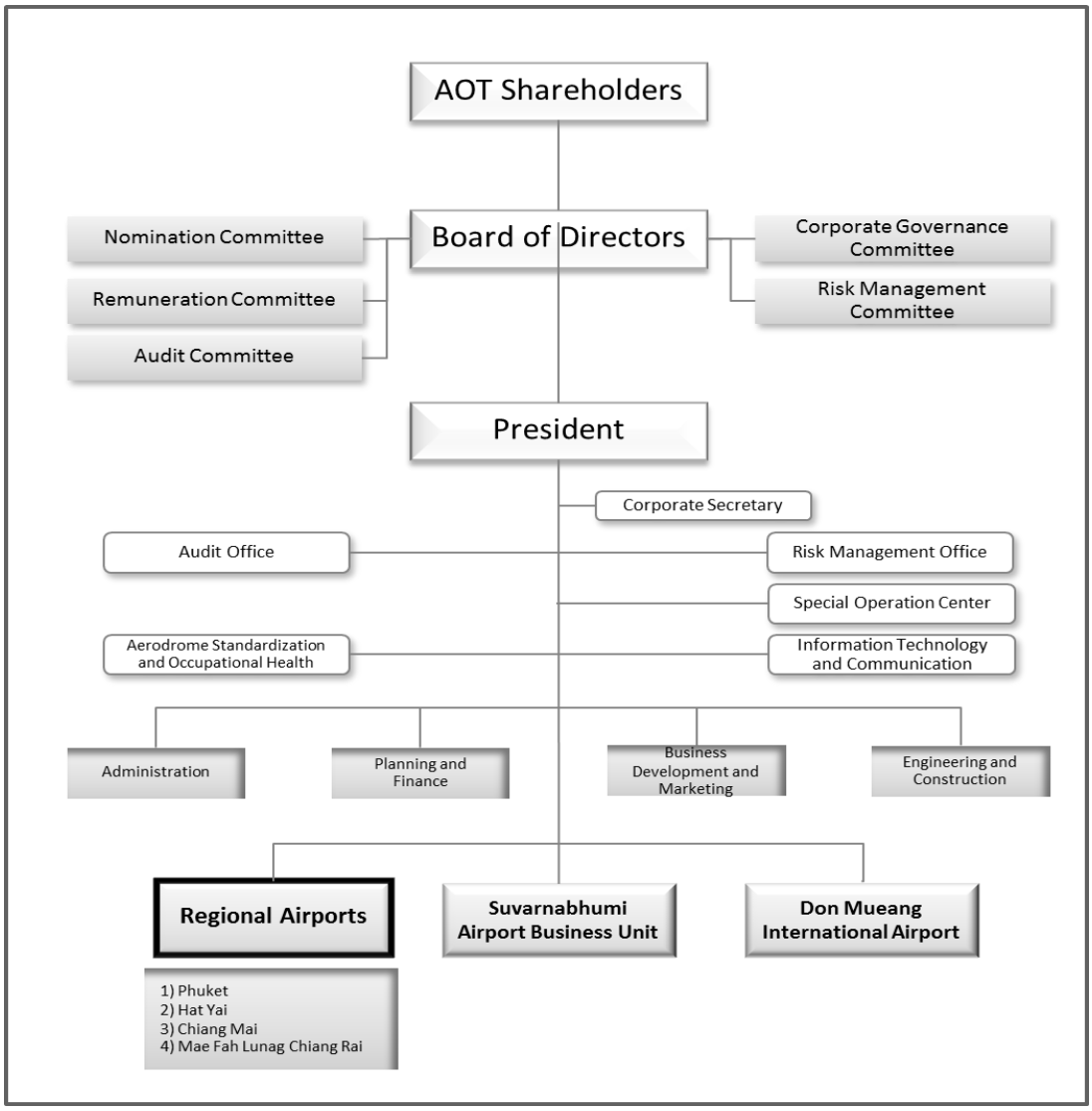


Figure 2.11: AOT Management Structure
Source: AOT, 2014b.

has the authority to manage operation plans and budgets as approved by the Board of Directors. Also, there are four main departments (i.e., administration, planning and finance, business development and marketing, and engineering and construction) under AOT management. Six airports are separately operated into three sections which are 1) Regional Airports, 2) Suvarnabhumi Airport Business Unite, and 3) Don Mueang International Airport. This research focuses only on the four regional airports

including 1) Phuket International Airports, 2) Hat Yai International Airport, 3) Chiang Mai International Airport, and 4) Mae FahLuang Chiang Rai International Airport.

Each regional airport is operated underneath seven main divisions: 1) Aerodrome Standardization and Occupational Health Division, 2) General Administration Division, 3) Commercial and Finance Division, 4) Maintenance Division, 5) Airport Services Division, 6) Security Division, 7) Rescue and Fire Fighting Division (Figure 2.12).

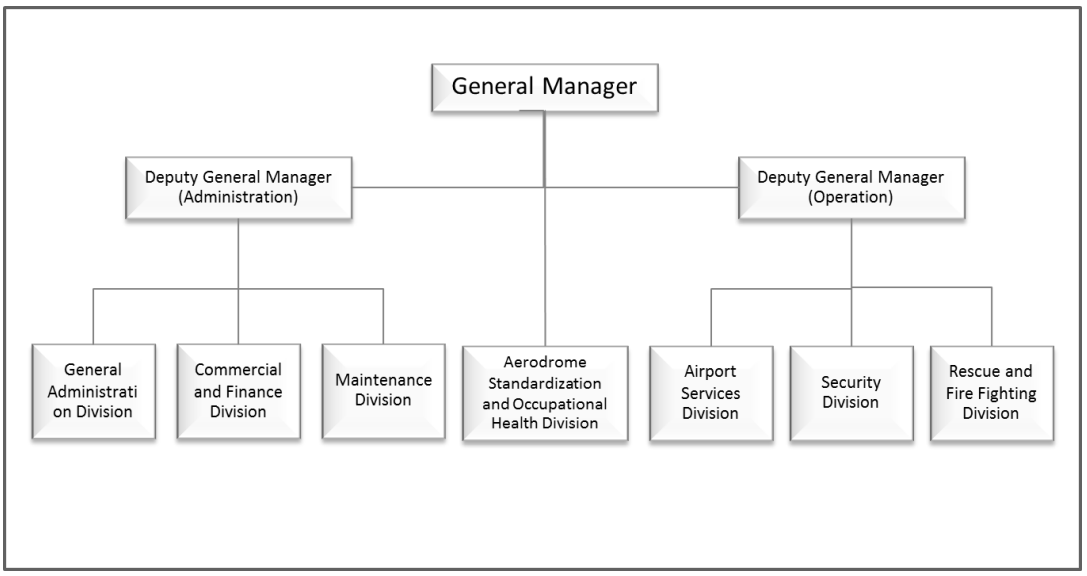


Figure 2.12 Organizational Structure at Four Regional Airports

The four airports serve both international and domestic flights. Both full-service carriers and low-cost carriers operate at the four airports. Airports allocate the airlines with aircraft parking bays, check-in counters, airline offices, boarding gates, and provide facilities related to passenger procedures. All four airports provide services and facilities for passengers: parking, an information center, check-in, retail shops, restaurants, a baggage drop service, tour & hotel reservations, car rental, medical services, prayer rooms, a post office, and public telephones (Table 2.17).

Table 2.17 Facilities and Services at Four Regional Airports

Facilities & Services	HKT	HDY	CNX	CEI
1. Information center	✓	✓	✓	✓
2. Restaurants	✓	✓	✓	✓
3. Souvenir	✓	✓	✓	✓
4. Book shops	✓	✓	✓	✓
5. Fashion & accessories	✓	✓	✓	✓
6. Fast Food & snacks	✓	✓	✓	✓
7. Coffee shop	✓	✓	✓	✓
8. Bakery & Ice cream	✓	✓	✓	✓
9. Lost and Found	✓	✓	✓	✓
10. Public phone	✓	✓	✓	✓
11. Tour service reservation	✓	✓	✓	✓
12. Car rental	✓	✓	✓	✓
13. Airport limousine	✓	✓	✓	✓
14. Postal services	✓	✓	✓	✓
15. Convenience stores	✓	✓	✓	✓
16. Massage	✓	✓	✓	✓
17. Exchanges	✓	✓	✓	✓
18. Prayer room	✓	✓	✓	✓
19. Left luggage service	THB 80 /day	THB 10 / day	THB 200 / day	THB 300 / day
20. Emergency medical service	06.00-24.00	06.00-24.00	08.00-23.00	08.00-22.00
21. Parking rate (4-wheel car)	THB 200 /day	THB 100 / day	THB 200 / day	THB 100 / day
22. Parking space	12,884 sqm.	28,751 sqm.	12,215 sqm.	28,629 sqm.
23. Parking unit	447	883	886	603
24. Connecting gate aircraft parking	2	3	6	2
25. Remote parking bay	5	4	14	3
26. Sub-contractors	✓	✓	✓	✓

Source: AOT, 2014e, 2014f, 2014g, 2014h.

In addition, basic services and facilities are available at the airports as well. The four airports provide seats, stairs, escalators, information screens, public announcements, information signs, security screening, washrooms, baggage belts, connecting gates, passenger steps, airfield buses, departure hall, arrival hall, an airport staff. These supplemental services are already charged in terms of airport tax. AOT charges departure passengers 100 Baht for domestic flights and at 700 Baht for international flights (Department of Civil Aviation, 2014e).

2.6.4 Related Research on Thailand Airports

A numbers of literatures on Thailand airports were found out. Most of them focused on passengers' satisfaction towards airport services of individual airports. Two third of reviewed research relied on prime airports (i.e., BKK and DMK) (Athas Rerkpatima, 2008; Chalermphon Kitrungruang, 2011; Paisit Piriyapong, 2011; Phanuphong Phong-Ngam, 2010; Sachar Thanasrivanitchai, 1998; Suthon Prakobpetch, 2005; Tana Kanjanasirikul et al., 2007) whereas the others related to Thailand provincial airports (Duangjai Jamjang, 2009; Nattaya Prasertsuwan et al., 2001; Saengarun Saengsuda, 2011; Somkiet Naiwikul, 2008). It's also found that the study set between Thailand airports and the low-cost carriers' schemes were neglected. Also, the passengers of the low-cost carriers had never mentioned in a relation to airports on previous research. In addition, the study on Thailand airports through compound airports were neither not appointed. Thus, this research was planned to fill the research gaps by studying on airport operational efficiency by way of the low-cost carriers. Table 2.18 depicts related research on Thailand airports.

Table 2.18 Related Research on Thailand Airports

Authors (year)	Topics	Airports	Source of Data	Research Aims / Highlights	Significant Results	Variables Used
Sachar Thanasrivanitchai (1998)	Evaluation of Passenger Services Performed in the International Terminals at Bangkok International Airport	DMK	– 3,601 passengers (passenger perception-response model)	This research was aimed to study the behavior of airport users and to develop a model as an examining tool for evaluating airport efficiency.	The model verification and validation tests showed that the models have the capability to replicate the real-world situations to a certain extent. The resulting models will be particularly useful for identifying potential improvements on passenger services provided at the Bangkok International Airport.	– Experiences on air transportation, travel purpose, time spent at the airport
Nattaya Prasertsuwan et al. (2001)	A Study of Passenger Satisfaction at Chiang Mai International Airport	CNX	– 301 domestic thai passengers	The researh's aims were to study satisfaction levels of passengers and to find significant factors on personal behavioral on satisfaction.	Passengers mostly satisfied on airport cleanliness, safety measures, restaurants, information signs, ancillary services, facilities, parking management and retail shops, respectively. Personal behavior of passengers did not show significant results on satisfaction.	– Gender, age, education, occupation, ailine class, travel purpose – Parking, cleanliness, signs, facilities, retail shops, food & beverage, airport services, security
Suthon Prakobpetch (2005)	Study of Customer's Satisfaction to Services in the Airport of Thailand Public Company Limited	DMK	– 400 Thai passengers	The exploratory study was aimed at exploring satisfaction levels of passengers at Don Mueang International Airport.	Among 6 dimensions, retails were highly satisfied compared to signs, cleanliness, facilities, parking, and restarants. Different gender, age, and income showed significant differences on satisfaction. Curbside, cleanliness, and toilets needed to be improved .	– Gender, age, education, occupation, income, – Cleanliness, signs, retails, restaurants, parking, facilities (lifts, escalators, waiting areas, trolley, public announcement, information service)

Table 2.18 (Continued)

Authors (year)	Topics	Airports	Source of Data	Research Aims / Highlights	Significant Results	Variables Used
Tana Kanjanasirikul et al. (2007)	Passenger Satisfaction on Suvarnahbumi Airport' Service	BKK	– 246 Thai passengers	Passengers' satisfaction on Suvarnabhumi Airport' services were investigated.	Overall staisfaction was at a nutral level. Cleanliness was most satisfided followed by airport staff, place, and facilities. Different personal facotrs (gender, age, occupation, income) showed different satisfaction levels, significantly.	– Gender, age, occupation, income – Accessiblility, parking, terminal, toilets, airport staff, cleanliness, facilities (information signs, escalators, lifts, restaurants, retails,seats, public transports, trolley)
Athas Rerkpatima (2008)	Service Quality at Suvarnabhumi International Airport from the Viewpoint of Thai Passengers	BKK	– 400 Thai passengers	Objectives were to investigate passengers' behaviors, to study quality of services provided at the airport, to compare service quality with demographic variables, and to evaluate satisfaction levels.	– Respondents mostly had visited the airport for 2-3 times and mostly spent time for 2-3 hours at the airport. – There were differences between perceptions and expectations. – Gender, age, education, occupation, income, and residence showed significant differences on service quality evaluated.	– Gender, age, education, occupation, income, place of residence, experiences on airports, – Airport location, accessibility, information signs, terminal, parking, cleanliness, trolley, lifts, escalators, air-condition, light, information counters, flight information screen, toilets, seats, check-in counters, immigration, security screening, baggage claim,

Table 2.18 (Continued)

Authors (year)	Topics	Airports	Source of Data	Research Aims / Highlights	Significant Results	Variables Used
Somkiet Naiwikul (2008)	Satisfaction of the Airport Users on the Service of Ubon Ratchathani International Airport, Thailand	UBP	– 384 passengers	The study was to investigate service satisfaction of airport users, compare satisfaction results of different passengers' profiles, and to explore obstacles of Ubon Ratchathani International Airport	Different age groups showed significant different on airport facilities whereas no differences found on gender, occupation, education, and behavior.	– Gender, age, occupation, education, experiences at airports – Airport staff, airport rules, airport procedures, flying time, airport facilities (seats, newspaper, trolley, toilets, cleanliness, exchanges), safety, airport staff
Duangjai Jamjang (2009)	The Study of Customer's Requirements on Public Services of Chiang Rai International Airport	CEI	– 400 Thai passengers	Passengers' needs and problems occurred while using airport services.	Cleanliness was the most important factor affecting passengers' needs followed by parking services, staff services, facilities, airport signs, safety measures, and restaurants. Some inconveniences were found (toilets' cleanliness, airport signs, restaurants, lifts, escalators, parking areas, staff services, and safety measures.	– Gender, age, education, occupation, income, travel purpose, time used in airport – Cleanliness, information signs, retail shops, banks, exchange services, restaurants, terminal facilities (lifts, escalators, seats, trolley, check-in counters, baggage belts, drinking, toilets, public announcement), parking, airport staff, safety measures

Table 2.18 (Continued)

Authors (year)	Topics	Airports	Source of Data	Research Aims / Highlights	Significant Results	Variables Used
Phanuphong Phong-Ngam (2010)	Relationship between Service and Satisfaction of Domestic Customers at Suvarnabhumi Airport	BKK	– 400 domestic passengers	The study was aimed to study on domestic customers' satisfaction, to compare the satisfaction level on personal factors	Neutral satisfaction levels were rated for ground transportation, parking building, cleanliness, airport signs, retails, facilities, and security screening. Income showed significant results on satisfaction whereas gender, age, education did not show any differences.	– Gender, age, education, occupation, income – Ground transportation, parking, cleanliness, signs, retails & restaurants, facilities (toilets, trolley, seats, escalators, lifts, information screen, information announcement), security check
Chalermphon Kitrungruang (2011)	Passengers' Satisfactions with Suvarnabhumi Airport's Services Bangkok	BKK	– 400 Thai passengers	Thai passengers' satisfaction toward services at Suvarnabhumi Airport.	– Respondents were highly satisfied on retails, parking place, facilities, safety & security, and immigration. – Gender, age, education level, occupation and salary, were not significantly different.	– Gender, age, education, occupation, income – Arrival procedures, departure procedures, parking, terminal cleanliness, facilities, shops & restaurants, security & immigration

Table 2.18 (Continued)

Authors (year)	Topics	Airports	Source of Data	Research Aims / Highlights	Significant Results	Variables Used
Paisit Piriyapong (2011)	An Evaluation of Passenger and Staff Satisfaction in Airport Service Quality by Comparing Expectation and Perception: The Example of Suvarnabhumi International Airport, Bangkok, Thailand	BKK	– 700 passengers – 300 airport staff	Examining the relationship between airport service quality and the levels of satisfaction evinced by passengers and airport staff.	– Passengers differntly perceived quality of services from airport staff. – There were Gaps between staff's perceptions vis-à-vis passengers' expectations and actual passengers' Expectations and the Gap between the perceptions and the expectations of airport staff and the service quality that they believed they had provided	– Gender, age, education, marital status, occupation, income, country of residence, accompanying persons, travel experiences, travel purpose, airline class, times used at airport, – Accessibility, airport facilities, security, shopping, restaurant, airline, arrival services, airport image,
Saengarun Saengsuda (2011)	Customers' Satisfactions Towards Indicators on Security of Chiang Rai International Airport	CEI	– 323 airport customers (passengers, airport staff, entrepreneurs)	Satisfaction of airport customers on safety indicators (products, place, process, effectiveness & quality of production, marketing promotion, physical evidence, price, and other capitals)	– Most of respondents satisfied with all eight indicators at the high level. However, security staff was perceived as neutral services where improvements were needed.	– Gender, age, education, occupation – Product, place, process, productivity and quality, people, promotion and education, physical evidence, price and other costs service

2.7 Conclusion

The development and management of airports were illustrated. The review of literatures illustrated related elements on operating airports as well as measuring tools and crucial factors on airport operation. Arrival procedures and departure procedures were the operation lines faced by airport customers. Both low-cost carriers and low-cost carrier passengers were important to be involved in a study of airport operational efficiency. The research gap on Thailand airport operation toward the low-cost carriers was also indicated.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was used, and all of its stages: unit of analysis, research methodology, research process, and conceptual research framework. Both quantitative and qualitative research methods were utilized into this study.

3.2 Unit of Analysis

The unit of analysis in this dissertation is 'Thailand airports which offer services for low-cost carriers that operate scheduled domestic flights'. Six major airports (i.e., Suvarnabhumi (BKK), Don Mueang (DMK), Phuket (HKT), Hat Yai (HDY), Chiang Mai (CNX), and Mae Fah Luang Chiang Rai (CEI) were operated by Airports of Thailand Public Company Limited (AOT) and served more than 75% of all domestic passengers in 2012 (AOT, 2013a; Department of Civil Aviation, 2014a). Because of their importance to Thai tourism, these six airports are the focus of the research. However, because BKK and DMK are located in metropolitan areas and show a number confounding factors, they have been excluded from this research. BKK is an airport that was built and operated on a much larger scale than the other five airports and its original purpose was to be a world-class international airport and serve as a Hub in Asia. DMK specifically serves only low-cost carriers, for both domestic and international flights. For these confounding reasons, BKK and DMK had been excluded from the list of airports under consideration.

This research had selected airports which are similar in characteristics, similar in services, and be able to be generalized as 'Thailand airports'. Thus, the unit of

analysis for this research is based on four airports which are referred to as ‘Thailand airports’, including 1) Phuket International Airport, 2) Hat Yai International Airport, 3) Chiang Mai International Airport, and 4) Mae Fah Luang Chiang Rai International Airport.

3.3 Research Methodology

This research applies mixed research method comprising of quantitative and qualitative research methodologies. Mixed research methods employ both qualitative and quantitative research methods in a bid to explore the strengths of both the methods. Mixed research is a methodology that focuses on research questions that call for real life contextual interpretations. The research questions that are addressed under mixed research protocols are multi-level questions that may have multiple cultural investigations (Borrego, Douglas, & Amelink, 2009). The qualitative aspect of mixed research approaches helps the researcher in assessing the magnitude and the randomness of various constructs. The qualitative research enables the researcher to establish the meaning and to comprehend or understand the nature of the constructs (Greene, 2008).

The instruments that are employed in both quantitative and qualitative techniques are also employed, in mixed methods, to get to a conclusive end to all matters that are being investigated in the research. Mixed methods assist the researcher to frame the research question within theoretical and philosophical constructs. Mixed research methods are explorative and they give the researcher detailed relevance of the question that is under investigation (Commander, & Ward, 2009). Researchers have the ability to cover a question extensively while exploring the two dimensions of the research investigation (Tànfani, & Testi, 2012).

Mixed methods allow the researcher to investigate the research question in a variety of ways. Therefore, mixed research methods increase the validity of the data that is gathered for answering the research question (Leech, & Onwuegbuzie, 2011). The techniques of investigating a research question through multiple avenues are termed as triangulation and it is the main advantage of the mixed research method

(Greene, 2008). The data collection instruments that are used are the best because of the multiple avenues that are adopted for data collection. The data that is collected develops a deeper understanding of the question. However, deeper understanding is subject to the knowledge of the data analyst (Commander, & Ward, 2009).

The data analyst must be competent in the interpretation of the information or data that has been collected through the two processes that have been employed. Consumers of the research have the liberty to choose which method, either qualitative or qualitative, to use for the interpretation of the final research document. The multidimensional aspect of the research enables a research consumer to get detailed coverage of the entire process (Borrego et al., 2009). The strengths of each research method are employed into the research resulting in a conclusive outcome.

Quantitative techniques employ the extensive compilation and use of data. The data sets or information that is utilized for the performance of quantitative studies provide an in-depth understanding of the study topic. The graphical and chart representations that are made for such research studies enable the researcher to have an analytical view of the topic under study (Borrego et al., 2009). The performance of quantitative studies is not limited to any instrument. The researcher can use various instruments to perform the research.

Qualitative research allows the researcher to have a better understanding of the group that is being targeted for study. The questions that are asked during a qualitative process seek to explain the circumstances for the existence of a scenario (Borrego et al., 2009). The performance of individual exercises, only qualitative, means that the study will not require the input of additional specialized personnel. The cost of the study will be lower than the cost of the study that involves mixed methods.

3.3.1 Quantitative Research Method

The number of passengers using low-cost carriers is large enough to be studied by quantitative research methods. Quantitative methods were employed to investigate the levels of importance and efficiency of Thailand airports' operational attributes and operational procedures (objective 2). Quantitative methods were also used to analyze low-cost carrier passengers' service requirements of Thailand airports' operational

attributes (objective 3). Six elements related to quantitative research methods are described as follows.

3.3.1.1 Population and Samples

The population of interest is 'low-cost carrier passengers (LCC passengers) who had used Thailand airports.' The annual number of low-cost carrier passengers at Thailand airports is higher than one million. Due to budget and time constraints it would be impossible to reach each passenger. In order to meet the availability of population elements, to lower costs of data collection, and to save time, sampling was required in this research (Cooper & Schindler, 2003). Thus, samples of the study are 'Thai and foreign nationals who flew on low-cost carriers' domestic flights and arrived to and departed from HKT, HDY, CNX or CEI within the past year.' This research adopts nonprobability sampling since the names and demographics of all LCC passengers are not available. It is feasible to use nonprobability sampling to calculate sample sizes and to identify sampling techniques because the number and LCC passengers is quite variable and changes daily.

3.3.1.2 Sample Size

Even it is impractical to find every passenger who had traveled with LCCs at Thailand airports within the last year, to be a respondent to this research, a researcher also needed to consider the reliability of the sample size. The sample size was based on available data of LCC passengers from the last three years from 2010 to 2012 (AOT, 2011a, 2012a, 2013a). The average number of passengers during these three years had been calculated to represent the population number or 'N' in this research. The three-year average number of the population was 4,966,983 (N) (Table 3.1) The identified sample size is 384 (n) using the sample size table of Krejcie, & Morgan (1970) at a population of more than 1,000,000 people, and with a confidence levels of 95% and a margin error of 5%. Because this research focuses on the overall picture of Thailand airports, the 384 samples were equally dispersed to the four airports. Because sample sizes should be no smaller than 30 LCC passengers from each low-cost carrier, the sample sizes had to be properly adjusted for Phuket International Airport (HKT) and Mae Fah Luang Chiang Rai International Airport (CEI).

Table 3.1 3-Year Average Numbers of LCC Passengers at Four Airports

Airports	2010	2011	2012	3-year Average
HKT	1,390,641	1,634,426	1,751,004	1,592,024
HDY	946,141	1,278,006	1,466,447	1,230,198
CNX	1,281,552	1,687,774	2,111,789	1,693,705
CEI	362,512	413,045	577,613	451,057
Total	**3,980,846**	**5,013,251**	**5,906,853**	**4,966,983**

Source: AOT, 2011a, 2012a, 2013a.

Therefore, total sample size of the research is 423 LCC passengers, comprising of 127 at HKT, 96 at HDY, 96 at CNX, and 104 and CEI. Also, the proportion of passengers among low-cost carriers at each airport was concerned to identify sample sizes. HKT was the only airport that had representative samples from all three airlines: Thai AirAsia, Nok Air, and Orient Thai Airlines. At the other three airports, responses only came from passengers flying on Thai AirAsia or Nok Air, because Orient Thai Airlines was not operating in those airports in 2013. Finally 423 samples derive from 253 passengers of Thai AirAsia, 140 passengers of Nok Air, and 30 passengers of Orient Thai Airlines (Table 3.2).

To be more precise, the proportion of Thai passengers to foreign passengers was a further consideration. To reduce sampling bias, this proportion was analyzed within each carrier. Since there is no exact number to calculate the proportion between those nationality groups, the researcher drew data from key informants who had at least one year of working experience to provide average proportional numbers. Three staff members who work at the airports were selected from each low-cost carrier to act as key informants. Each key informant gave different estimations so their numbers were later calculated to an average proportion. The average proportion of Thai to foreign passengers is different for each low-cost carrier.

Table 3.2 Sample Sizes Categorized by Airports and Low-Cost Carriers

Airports	All airlines		Thai AirAsia		Nok Air		Orient Thai *	
	Target Samples (%)	Collected Samples (%)	Target Samples (%)	Collected Samples (%)	Target Samples (%)	Collected Samples (%)	Target Samples (%)	Collected Samples (%)
HKT	96 (100)	**127 (100)**	67 (70.28)	**67 (52.76)**	14 (14.79)	**30 (23.62)**	14 (14.93)	**30 (23.62)**
HDY	96 (100)	**96 (100)**	45 (46.62)	**53 (55.21)**	37 (38.31)	**43 (44.79)**	14 (15.07)	**0 (0.00)**
CNX	96 (100)	**96 (100)**	50 (51.92)	**59 (61.46)**	31 (32.74)	**37 (38.54)**	15 (15.34)	**0 (0.00)**
CEI	96 (100)	**104 (100)**	53 (55.32)	**74 (71.15)**	16 (16.33)	**30 (28.85)**	27 (28.35)	**0 (0.00)**
Total	**384**	**423 (100)**		**253 (59.78)**		**140 (33.12)**		**30 (7.10)**

Source: AOT, 2011a, 2012a, 2013a.

**Note: ***Orient Thai Airline did not operate flights in the year 2013 at HDY, CNX, and CEI.

Even for the same low-cost carrier, the proportion varies among different airports (Table 3.3). Therefore, sample size calculations had been realized for both airport equivalence and nationality proportion.

3.3.1.3 Sampling Techniques

This research applies purposive sampling as a nonprobability sampling technique to select only LCC domestic passengers as appropriate samples. Both judgment sampling and quota sampling were considered in purposive sampling.

Judgment sampling is fruitful to find the right respondents to provide advantageous information (Cooper, & Schindler, 2003; Sekaran, 2003). In this research, judgment sampling has been used to evaluate the experience of respondents. That is, passengers who had experienced at least one LCC domestic

Table 3.3 Sample Proportion of Thai to Foreign LCC Passengers, Estimated by Key Informants on LCC Staff

Airports / Carriers		Thai AirAsia					Nok Air					Orient Thai				
HKT	**Key informants**	**1**	**2**	**3**	**Mean**	**Sample size**	**1**	**2**	**3**	**Mean**	**Sample size**	**1**	**2**	**3**	**Mean**	**Sample size**
	(Years of experience)	**(9)**	**(2)**	**(8)**	**Percent**	**[n=67]**	**(1)**	**(1)**	**(1)**	**Percent**	**[n=30]**	**(9)**	**(3)**	**(9)**	**Percent**	**[n=30]**
	Thai passengers	35	60	30	**42**	**28**	75	80	90	**82**	**25**	65	75	60	**67**	**20**
	Foreigner passengers	65	40	70	**58**	**39**	25	20	10	**18**	**5**	70	30	60	**53**	**10**
HDY	**Key informants**	**1**	**2**	**3**	**Mean**	**Sample size**	**1**	**2**	**3**	**Mean**	**Sample size**	**-**	**-**	**-**	**-**	**-**
	(Years of experience)	**(2)**	**(8)**	**(4)**	**Percent**	**[n=53]**	-	-	-	**Percent**	**[n=43]**	-	-	-	-	-
	Thai passengers	70	75	75	**73**	**39**	-	-	-	**93.02**	**40**	-	-	-	-	-
	Foreigner passengers	30	25	25	**27**	**14**	-	-	-	**6.98**	**3**	-	-	-	-	-
CNX	**Key informants**	**1**	**2**	**3**	**Mean**	**Sample size**	**1**	**2**	**3**	**Mean**	**Sample size**	**-**	**-**	**-**	**-**	**-**
	(Years of experience)	(9)	(1)	(10)	**Percent**	**[n=59]**	(9)	(9)	(8)	**Percent**	**[n=37]**	-	-	-	-	-
	Thai passengers	50	45	50	**48**	**28**	85	85	85	**85**	**31**	-	-	-	-	-
	Foreigner passengers	50	55	50	**52**	**31**	15	15	15	**15**	**6**	-	-	-	-	-
CEI	**Key informants**	**1**	**2**	**3**	**Mean**	**Sample size**	**1**	**2**	**3**	**Mean**	**Sample size**	**-**	**-**	**-**	**-**	**-**
	(Years of experience)	(8)	(4)	(9)	**Percent**	**[n=74]**	(1)	(2)	(2)	**Percent**	**[n=30]**	-	-	-	-	-
	Thai passengers	77	70	75	**74**	**55**	90	95	90	**92**	**28**	-	-	-	-	-
	Foreigner passengers	23	30	30	**28**	**19**	10	5	10	**8**	**2**	-	-	-	-	-

arrival flight and one LCC domestic departure flight within the past year, at the selected airports were invited to participate.

Likewise, to ensure the adequacy of respondent groups (Cooper, & Schindler, 2003; Sekaran, 2003), proportional quota sampling was exploited to give proportionate numbers of Thai passengers to foreign passengers for each carrier at each airport. The total proportion of LCC domestic Thai passengers to LCC domestic foreign passengers is 69.50 to 30.50 (i.e., 294 Thais and 129 foreigners). Proportional and non-proportional quota sampling were employed to frame a minimum number of respondent passengers. In order to assure that small samples were adequate to represent passengers of a low-cost carrier at each airport, 30 samples were specified as the minimum number, as mentioned in the previous section 'Sample Size' (Table 3.2).

3.3.1.4 Research Tools and Design

A questionnaire was chosen to be the major tool of quantitative research due to the large sample size and cost effectiveness (Mann, 2003). Both Thai and English questionnaires were distributed to target samples. The four-page questionnaire consisted of 4 main parts, comprising both close-ended questions and open-ended questions as shown in the following parts (Appendix A).

1) Part A: Travel Experiences

Travel experiences cover five variables: purpose for travel, accompanying groups, experiences on sites, experiences on air transport, and experiences at airports (Table 3.4).

2) Part B: Levels of importance and efficiency toward airports' operational attributes and airports' operational procedures

In this part, 33 airport operational attributes and 9 airport operational procedures were identified to be evaluated using a Likert scale, in terms of both importance and efficiency. Likert scales measure attitudes, opinions, or beliefs (Likert, 1932) which is in line with passengers' evaluation of airport attributes. This research applied the six-scale, forced choice evaluation (Losby, 2012) because using even scales can avoid neutral answers, commit respondents to choose either positive.

Table 3.4 Variables, Related Questions, and Measurement Scales of Travel Experience

Variables	Related questions / statements	Measurement scales	Adjusted scales
1. Experiences on sites	1. Main purpose of the trip	Ordinal	Nominal
	2. Times the province was visited per year	Ordinal	Ordinal
	3. Transport used to get to the province	Ordinal	Nominal
2. Accompanying groups	1. Accompanying people	Nominal	Nominal
	2. Number of accompanying people	Ratio	Ordinal
	3. Travel arrangements	Nominal	Nominal
3. Experience on air transportation	1. Reasons of choosing LCC	Ordinal	Nominal
	2. Most frequently used airlines	Nominal	Nominal
	3. Experience of domestic LCC flight per year	Ratio	Ordinal
4. Experiences at airports	1. No. of arrivals and departures at the airport	Ratio	Ordinal
	2. No. of times flying with LCC at the airport	Ratio	Ordinal
	3. Average time used on departure	Ratio	Ordinal
	4. Average time used on arrival	Ratio	Ordinal

or negative scales (Gwinner, 2011; Losby, 2012; Market Directions, 2010), and eliminate misinterpretation of a mid-point scale (Losby, 2012).

Respondents are required to choose itemized rating scales from the minimum score of 1 to a maximum of 6. For levels of importance, a 1 means that the rated attribute or procedure is strongly unimportant, while a 6 means that the item is strongly important. Similarly, with regards to the efficiency measurement, a 1 refers to strongly inefficiency whereas a 6 means that an item is perceived to be strongly efficient (Table 3.5).

Table 3.5 Six-Level Evaluation and Statements

Levels	Statements on 'Importance'	Statements on 'Efficiency'
1	Strongly unimportant	Strongly inefficient
2	Unimportant	Inefficient
3	Somewhat unimportant	Somewhat inefficient
4	Somewhat important	Somewhat efficient
5	Important	Efficient
6	Strongly important	Strongly efficient

3) Part C: Suggestions on airport operational attributes and procedures

In addition to close-ended questions, the questionnaire utilized an open-ended question. Open-ended questions give a chance for respondents to express their opinions in any way they want (Sekaran, 2003). An open-ended question in this part let respondents give any further suggestions on airport operational attributes and operational procedures, in any way they perceived.

4) Part D: Socio-demographic profiles

Socio-demographic profiles were taken of each respondent: gender, age, nationality, marital status, religion, education, occupation, and income. Respondents replied to age, country of residence, and average monthly income by filling in numbers, whilst the others attributes were organized by checklists.

3.3.1.5 Validity and Reliability Tests

Both validity and reliability were a concern, in order to ensure the quality of the questionnaire and a goodness of data (Jennings, 2001; Sekaran, 2003). Item-Objective Congruence Index (IOC) was applied into a content validity test evaluated by five experts (Table 3.6).

Table 3.6 List of Five Experts Evaluating IOC

Experts	Position	Organization
. Asst.Prof.Dr.Aree Tirasatayapitak	Lecturer	Faculty of Hospitality and Tourism, Prince of Songkla University
. Ms.Bavornluck Kuosuwan	Training manager	IATA Authorized Training Center, Suan Sunandha Rajabhat University
. Mr.Seree Jitsopha	Deputy director-general	Department of Civil Aviation
. Mr.Damrong Klongakara,	Director	Mae Fah Luang Chiang Rai International Airport
. Gp.Norati Phonkarn,	Director	Hat Yai International Airport

The congruence index of the questionnaire is 0.97 (Appendix E) which is much higher than the minimum score at 0.5. This means the overall content on designed questionnaire are valid enough to be used in the tryout process. Also, the researcher has made small grammatical adjustments as recommended by the experts before launching the pilot test questionnaires.

Reliability results later came from the pilot questionnaire data. Pilot testing is intended to reveal errors in the designed questionnaire and to refine the tool before the final test (Cooper, & Schindler, 2003). 30 pilot questionnaires were distributed to LCC domestic passengers at Phuket International Airport. Nunnally (1967) pointed out that Cronbach's Alpha Coefficient must have a value in the range of 0-1 with a value closer to 1 indicating a more reliable tool. Moreover, an accepted Cronbach's Alpha Coefficient should be at least at 0.7. The reliability test in this research demonstrated a coefficient of internal consistency at 0.971 for levels of

importance and at 0.980 for levels of efficiency (Table 3.7) which refers to an excellent consistency (George, & Mallery, 2000; Nunnally, 1967) (Table 3.8). Thus, the questionnaire could be used for the study.

Table 3.7 Cronbach's Alpha Test Results

(N=30)

Items	Cronbach's Alpha Coefficient
Importance	0.971
Efficiency	0.980
Total Items	0.973

Table 3.8 Cronbach's Alpha Coefficient Scores and Explanation

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent (High-Stakes testing)
$0.7 \leq \alpha < 0.9$	Good (Low-Stakes testing)
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: George, & Mallery, 2000.

3.3.1.6 Data Collection

Data collection of this research is based on cross sectional studies because of time constrains and costs (Mann, 2003). That is, all 423 designed questionnaires were distributed to four airports including HKT, HDY, CNX, and CEI (Table 3.9) at the end of the year 2013. In November of 2013, 127 questionnaires and 96 questionnaires were distributed and collected from LCC passengers at HKT and HDY, respectively. In December of 2013, 96 questionnaires and 104 questionnaires were distributed and collected at CNX and CEI, respectively. All self-completed questionnaires were distributed in domestic departure lounges and collected by the researcher in order to assure the purposive qualification of respondents and to assure the questionnaires were completed.

Table 3.9 Numbers of Distributed Questionnaires

Airports	Thai AirAsia		Nok Air		Orient Thai		Total
	Thais	**Foreigners**	**Thais**	**Foreigners**	**Thais**	**Foreigners**	
1. HKT	28	39	25	5	20	10	**127**
2. HDY	39	14	40	3	0	0	**96**
3. CNX	28	31	31	6	0	0	**96**
4. CEI	55	19	28	2	0	0	**104**
Total	**150**	**103**	**124**	**16**	**20**	**10**	**423**
	253		**140**		**30**		

3.3.1.7 Data Analysis

In order to analyze quantitative results, data coding was required. Numerical codes were identified for each response before being analyzed with a computer software program (Appendix F). A full analysis of descriptive and inferential statistics will follow.

Descriptive statistics, including frequency, percentage, means, standard deviations, were applied to the data analysis. The analysis was adopted to describe basic data of the questionnaire.

Interferential statistics, comprising of a Paired-Sample *t* test, and a One-Way Analysis of Variance (One-Way ANOVA) were employed to address the stated research questions and research objectives.

3.3.2 Qualitative Research

There are three sample groups of the population and with regards to qualitative research results. The population includes 1) LCC passengers, 2) LCC staff, and 3) airport executives. Six elements regarding research design (i.e., population and samples, sample size, sampling techniques, research tools and designs, data collection, and data analysis) are detailed by population group as follows.

3.3.2.1 LCC Passengers

Qualitative data of the LCC passengers is utilized to support and describe some of the quantitative results. Acquired data from passengers is relevant

to importance, efficiency, and service requirements of Thailand airports' operational attributes (research objective 2 and 3). Qualitative elements of LCC are subsequently depicted.

1) Population and Samples

The target population of LCC passengers was duplicated from the population in question. That is 'low-cost carrier passengers (LCC passengers) who had used Thailand airports.' Since the whole target population cannot be reached, samples are identified as 'Thai and foreign nationals who flew on low-cost carriers' domestic flights and arrived to and departed from HKT, HDY, CNX or CEI within the past year.'

2) Sample Size

The total sample size of LCC passengers analyzed by qualitative methods is 27. There are 16 Thai passengers and 11 foreign passengers at four airports who participated in the qualitative aspect of the study.

3) Sampling Techniques

Similar to the sampling techniques of quantitative methods, a 'purposive sampling technique' was applied to the qualitative research. The research focuses only on LCC domestic passengers who have experienced at least one LCC domestic arrival flight and one LCC domestic departure flight at the selected airports (HKT, HDY, CNX, and CEI), within 1 year. Since the researcher is the only person collecting qualitative data, purposive conditions were initially screened to assure required characteristics and participation willingness of the samples.

4) Research Tools and Designs

Personal interview were adopted into the research for three reasons. Firstly, the researcher, as an interviewer can pre-screen respondents to ensure that they fit the population profile. Secondly, the interviewer can answer any queries about survey, probe for answers, and pose follow-up questions. Lastly, illiterate respondents could be reached (Cooper, & Schindler, 2003; Sekaran, 2003). The researcher used a semi-structure interview to gather data from respondents. Significant advantages of semi-structured interviews are that particularized information on opinions and attitudes is easily elicited; the interviewer is able to ask

for further details and clarification; it is feasible to raise follow-up questions; and this kind of interview generates a relaxed atmosphere (Jennings, 2001).

'Interview form' is the main research tool to ascertain data for the qualitative portion of the study. Semi-structured interviews were continuously conducted until the raised issues are repeated (Appendix B). The interview form used for LCC passengers comprises of five questions, as follows.

Question 1: 'Could you please introduce yourself and your travel experiences?'

Question 2: 'As a passenger, what are important things for passengers that airport should realize?'

Question 3: 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'

Question 4: 'As a passenger, could you please raise areas or issues that the airport needs to improve?'

Question 5: 'Apart from what we have discussed, what are your other suggestions for this airport?'

In addition, the researcher also had a list of prompts for issues in relation to the five questions, in order to maximize data completeness and to properly interact with the interviewees (Jennings, 2001) (Table 3.10).

5) Data Collection

Interviews were taken place at four airports during the time of quantitative data collection in November and December, 2013.

6) Data Analysis

'Content analysis' was selected to analyze all obtained qualitative data being processed through interviews. Similar issues were grouped into themes related to airport operation and illustrated in both tables and figures.

Table 3.10 Semi-Structured Interview Prompt List

Questions and Lists of Issues
1. Could you please introduce yourself and your travel experiences? ■ Experiences on LCC ■ Experiences at the airport
2. As a passenger, what are important things for passengers that airport should realize? ■ Departure procedures - Curbsides - Check-in - Terminal (infrastructure, facilities, and services) - Gate ■ Arrival procedures - Gate - Baggage claim - Public services - Curbsides
3. As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?' ■ Facilities ■ Services ■ Persons
4. As a passenger, could you please raise areas or issues that the airport needs to improve?' ■ Facilities ■ Services ■ Persons
5. Apart from what we have discussed, what are your other suggestions for this airport?'

3.3.2.2 LCC Staff

1) Population and Samples

There are three low-cost carriers including Thai AirAsia, Nok Air, and Orient Thai Airlines which operate flights at the target airports (AOT, 2013a). As low-cost carriers are a primary customer of airports, as mentioned in Chapter 2, customers must be involved in evaluating the operational efficiency of airports. Therefore, a population was derived from LCC staff that had been working at the four airports for at least one year and dealt with domestic flights. LCC staff refers to both supervisory staff and operational staff. This population group focuses on a linkage with the 1st and the 3rd objectives of this research. That is, LCC staffs are required to evaluate operational efficiency of Thailand airports and to give supportive information on low-cost passengers' service requirements.

2) Sample Size

A sample size of LCC staff is 30, including 8 supervisory staff and 22 operational staff working at the target airports.

3) Sampling Techniques

Purposive and Snowball sampling techniques were applied to choose proper interviewees to take part in semi-structured interviews. LCC staff from both operational and management levels with at least one year of working experience at the airports were judged to be interviewees. In addition, the researcher used a snowball technique to better reach other staff in the same carrier.

4) Research Tools and Designs

A semi-structured interview was initially conducted to obtain data for the two research objectives, as previously mentioned. The interview form contains five sections in similar ways to the LCC passengers' interview.

Question 1: 'Could you please introduce yourself and your work experience?'

Question 2: 'What are important things about carriers and passengers that airports should realize?'

Question 3: 'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?'

Question 4: 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'

Question 5: 'Apart from what we have discussed, what are your other suggestions for this airport?'

5) Data Analysis

Data gathered from personal interviews were analyzed using a content analysis method which emphasizes themes and issues of airport operation (Appendix C).

3.3.2.3 Airport Executives

1) Population and Samples

Customers who perceive services from airports are not the only ones associated with this research. Service providers, the airports themselves, are

crucial for this study. The population is defined as 'airport executives including both top and middle management who are responsible for airport operational tasks'.

2) Sample Size

For qualitative research methods, the sample size was not initially defined. The researcher reached seven airport executives from four airports.

3) Sampling Techniques

Purposive sampling was employed to find and reach only airport executives who were dealing with airport operational functions.

4) Research Tools

A semi-structured interview with five main questions was applied to collect data. The interview questions are demonstrated as follows.

Question 1: 'Could you please tell me about your working experience?'

Question 2: 'What are important things about the carriers and passengers that this airport concern about?'

Question 3: 'Could you please tell me anything that this airport could efficiently perform?'

Question 4: 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'

Question 5: 'Apart from what we have discussed, what are your other ideas on airport operation?'

5) Data Analysis

Content analysis was employed to analyze the collected data. Data retrieved from airport executives describe airport operational efficiency in relation to objective 1 and give support to low-cost passengers' service requirements, which is related to the 3rd objective of this research.

To conclude, this research uses mixed methodologies (Quantitative and Qualitative methods). The focus is on three relevant groups of population including LCC passengers, LCC staff, and airport executives. Since all population groups are unknown, nonprobability sampling techniques were employed. 'Purposive sampling technique' is a mutual technique used in both quantitative and qualitative research

methods for all samples. A questionnaire was a research tool used for quantitative results whereas semi-structured interviews were applied for qualitative data collection (Table 3.11).

3.4 Research Process

The research was designed by six main processes, comprised of literature reviews, Item-Objective Congruence evaluation, pilot testing, quantitative data collection, qualitative data collection, and data analysis (Figure 3.1).

3.4.1 Process 1: Literature Review

The review of literature provides related concepts and theories of airport development, airport operation, measuring airport operational efficiency, airport customers, and Thailand airports. Related variables and criteria were designed by a researcher at this early step of the process.

3.4.2 Process 2: Item-Objective Congruence Evaluation

To assure the validity of the questionnaire, Item-Objective Congruence evaluation was processed by five experts in airport operation and service. When the evaluation was complete, the questionnaire was adjusted according to experts' suggestions.

3.4.3 Process 3: Pilot Testing

Before distributing the questionnaire to the entire subject sample, the researcher tested the reliability of the questionnaire by pilot testing it with 30 LCC passengers at Phuket International Airport.

Table 3.11 Overview of Research Methodologies Relating to Research Objectives

Objectives	Research Method	Population	Sample Size	Sampling Technique	Research Tool	Data Analysis
(Obj. 1) To study the operational efficiency of Thailand airport from low-cost carriers' perspectives	1. Qualitative	LCC Staff	30	1.Purposive sampling 2.Snowball sampling	Semi-structured interview	Content Analysis
		Airport executives	7	Purposive sampling	Semi-structured interview	Content Analysis
(Obj. 2) To investigate levels of importance and efficiency in operational attributes and operational procedures of Thailand airports	1. Quantitative	LCC passengers	423	Purposive sampling (judgment sampling) (quota sampling)	Questionnaire	Descriptive and Inferential statistics
	2. Qualitative	LCC passengers	27	Purposive sampling	Semi-structured interview	Content Analysis
(Obj. 3) To analyze low-cost carrier passengers' service requirements toward Thailand airports' operational attributes	1. Quantitative	LCC passengers	423	Purposive sampling (judgment sampling) (quota sampling)	Questionnaire	Descriptive and Inferential statistics
	2. Qualitative	LCC passengers	27	Purposive sampling	Semi-structured interview	Content Analysis
		LCC staff	30	1. Purposive sampling 2. Snowball sampling	Semi-structured interview	Content Analysis
		Airport executives	7	Purposive sampling	Semi-structured interview	Content Analysis
(Obj. 4) To propose Thailand airport operation model for the low-cost carriers						

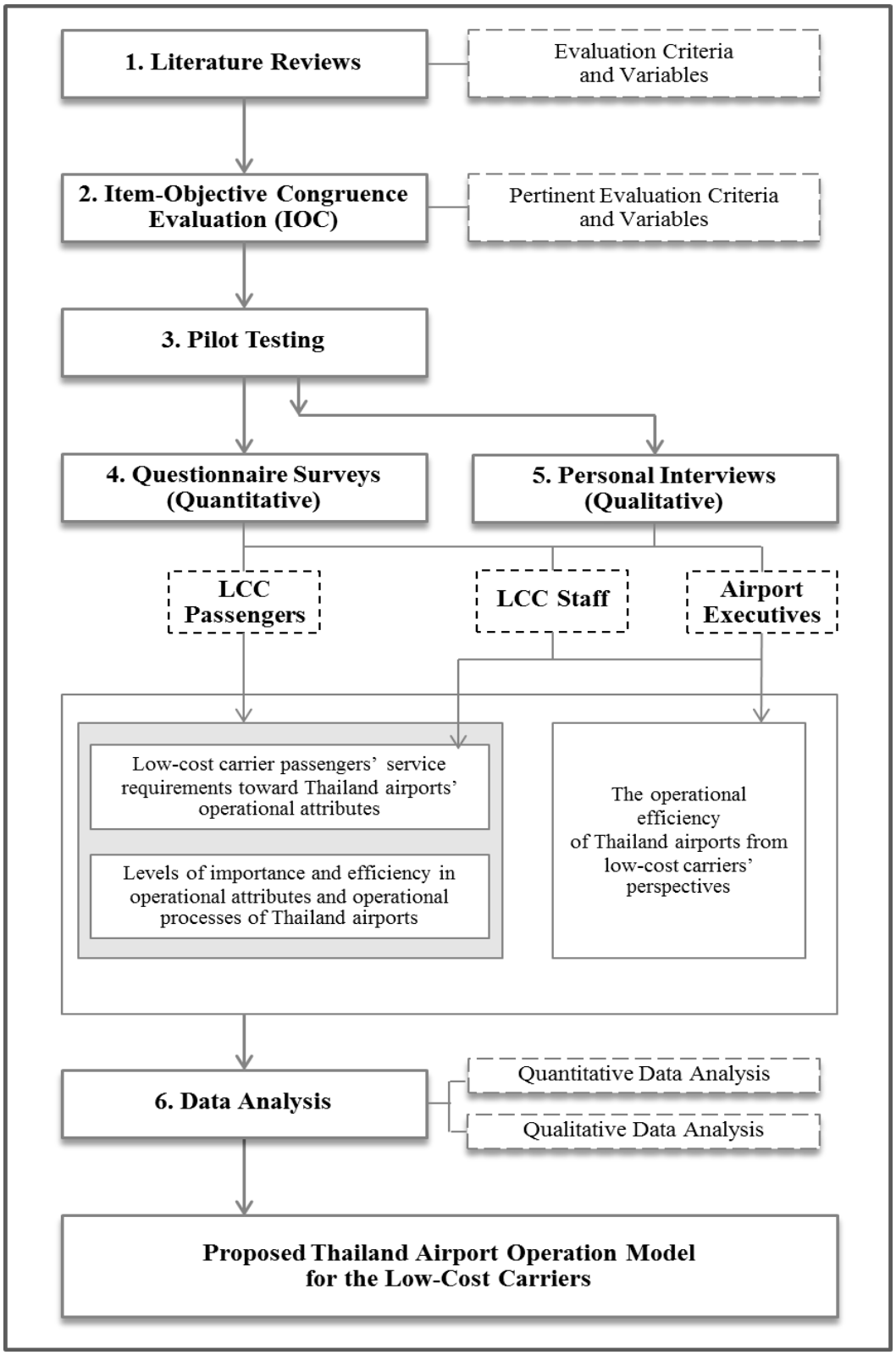


Figure 3.1 Research Process

3.4.4 Process 4: Questionnaire Surveys

Process 4 and 5 refer to the data collection period. At each airport, questionnaire surveys were prioritized before the interviews started. The 423 questionnaires were distributed to LCC domestic passengers at the departure lounge of four airports.

3.4.5 Process 5: Personal Interviews

The interviews were conducted in parallel with the questionnaires. The interviews focus on LCC passengers, LCC staff, and airport executives. All interviews were done by the researcher.

3.4.6 Process 6: Data Analysis

Both statistical analysis and content analysis were employed to analyze quantitative data and qualitative data, respectively.

3.5 Conceptual Research Framework

To study airports' operational efficiencies and to build up Thailand airports' operational models for the low-cost carriers, mixed research methodology was employed: qualitative and quantitative methods. The variables were divided into 'independent' and 'dependent' variables, which are related to the quantitative method. 'Qualitative' methods—personal interviews—were also used to find qualitative data, in accordance to all objectives (Figure 3.2).

Independent variables comprise of two main factors; socio-demographic profiles and travel experiences of passengers. That are, gender, age, nationality, marital status, religion, education, occupation, and income were considered as socio-demographic variables to be investigated in an association of both importance and efficiency levels on airport operational attributes. Travel experiences of passengers were also examined in the similar ways to socio-demographic variables. The differences between importance levels and efficiency levels of operational attributes and operational procedures were able to depict operational areas that passengers

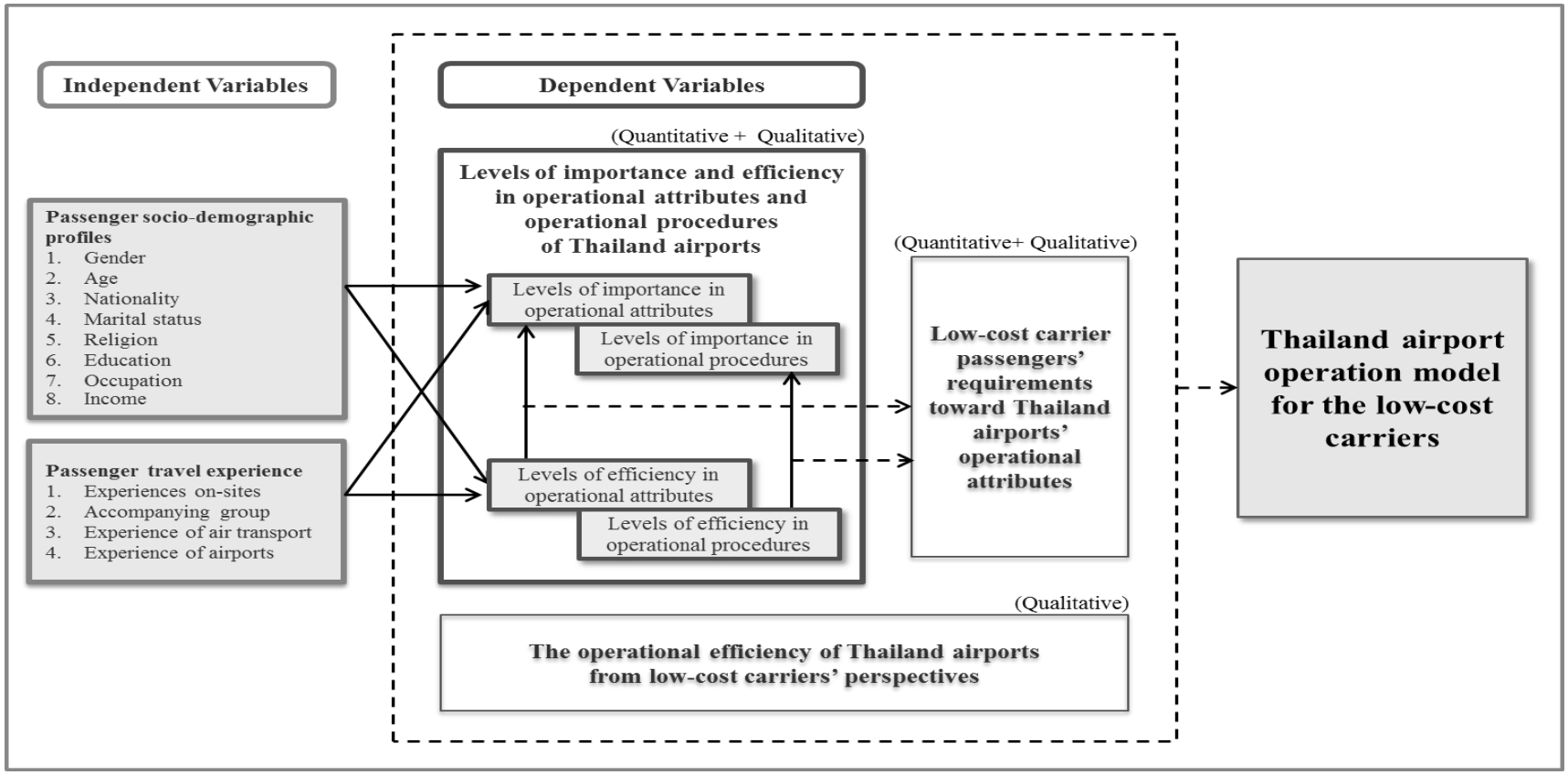


Figure 3.2 Conceptual Research Framework

required. In order to propose operation model for Thailand airports, airports' operational efficiency from the views of low-cost carriers were examined as well. Finally, three groups of investigated knowledge were integrated, analyzed, and constructed to be Thailand airport operation model for the low-cost carriers.

CHAPTER 4

RESEARCH FINDINGS AND DISCUSSION

Findings and discussion on a research titled 'Thailand airport operation model for the low-cost carriers' are divided into five sections: 4.1 Descriptive results, 4.2 Operational efficiencies of Thailand airport from the view of low-cost carriers, 4.3 Levels of importance and efficiency of Thailand airports' operational attributes and operational procedures, 4.4 Low-cost carrier passengers' requirements toward Thailand airports' operational attributes, and 4.5 Thailand airport operation model for the low-cost carriers.

4.1 Descriptive Results

As previously mentioned in Chapter 3, data were collected by means of both quantitative and qualitative methods. Hence, descriptive results are also depicted in two subtopics; Quantitative descriptive results and Qualitative descriptive results.

4.1.1 Quantitative Descriptive Results

According to the questionnaires used in this research (Appendix A), four main parts included socio-demographic profiles, travel experiences, levels of importance and efficiency toward airport's operational attributes and airports' operational procedures, and suggestions on airport operational attributes and procedures. Four parts were revealed as descriptive results in this section.

4.1.1.1 Socio-demographic profiles

Socio-demographic profiles of 423 low-cost carrier passengers are described under 8 specific variables: 1) Gender, 2) Age, 3) Nationality, 4) Marital status, 5) Religion, 6) Education, 7) Occupation, and 8) Income.

Of the 423 respondents, 225 (53.2&) were females and 198 (46.8) were males. The majority of respondents were 21-30 years, representing 44.0% of respondents. The next four groups were 31-40 years (36.9%), 41-50 years (11.3%), 51-60 (4.0%), and 11-20 years (2.4%). The remaining group with minority was in the 61-70 age groups (1.4%).

Among 423 passengers, 294 (69.5%) of them are local Thai passengers whereas 129 (30.5%) are foreigners. The collected data was mostly from foreign passengers from Europe with 54 (12.8) samples. The next two regions were Americas and ASEAN passengers with 20 (4.7%) persons for each group. Most of Thai respondents resided in the South with 102 (24.1) persons, follow by respondents from Bangkok at 71 (16.8%) persons and from the North at 68 (16.1%) persons.

Most of respondents (61.0%) are single whereas 34.7% or 147 persons are married. Exactly, 281 (66.4%) of all respondents are Buddhists, 59 (13.9%) persons are Christians, 37 (8.7%) persons are Muslims, 32 (7.6%) persons are irreligious, and the rest are Brahmans, Sikh, and others.

More than 80% of total respondents gained bachelor degree. 233 (55.1%) respondents had bachelor degree education, 120 (28.4%) respondents had higher education, and only 70 (16.5%) respondents achieved below bachelor degree.

Of the 423 respondents, 181 (42.8%) were private business employees, 106 (25.0%) were civil servants, 52 (12.3%) were business owners, 34 (8.0%) were students and 30 (7.1%) were temporary workers. Only 2.4%, 1.2%, and 1.2% respectively were retired persons, housewives, and unemployed.

78.3% of respondents gave information about their average monthly income. This might have been because the question related to income, which is sometimes a confidential matter for some respondents. 124 (29.3%) of respondents had average incomes of 20,001 - 40,000 Baht per month. 78 (18.4%) of respondents had an average monthly income of less than 20,001 Baht.12.8 % or 54 respondents gave their average income of more than 100,000 Baht per month (Table 4.1).

Table 4.1 Frequency and Percentage of Passenger Respondents Classified by Socio-Demographic Profiles

(n = 423)

Socio-Demographic Data	Frequency	(%)
Gender		
Male	198	46.8
Female	225	53.2
Age		
11-20 years old	10	2.4
21-30 years old	186	44.0
31-40 years old	156	36.9
41-50 years old	48	11.3
51-60 years old	17	4.0
61-70 years old	6	1.4
Nationality & Residence		
Foreigners	129	30.5
ASEAN (Except TH)	*20*	*4.7*
East Asia	*9*	*2.1*
South Asia	*2*	*0.5*
Europe	*54*	*12.8*
America	*20*	*4.7*
Africa	*5*	*1.2*
Oceania	*10*	*2.4*
Middle East	*9*	*2.1*
Thais	294	60.5
Bangkok	*71*	*16.8*
Central	*21*	*5.0*
West	*6*	*1.4*
East	*11*	*2.6*
North	*68*	*16.1*
Northeast	*15*	*3.5*
South	*102*	*24.1*
Marital status		
Single	258	61.0
Married	147	34.7
Divorced/Widows	18	4.3
Religion		
Buddhism	281	66.4
Christianity	59	13.9
Islam	37	8.7
Irreligion	32	7.6
Brahmanism/Hinduism	3	0.7
Sikh	2	0.5
Others	9	2.1
Education		
Below bachelor degree	70	16.5
Bachelor degree	233	55.1
Above bachelor degree	120	28.4
Occupation		
Civil servant	106	25.0
Business owner	52	12.3
Private business employee	181	42.8
Housewife	5	1.2
Student	34	8.0
Temporary worker	30	7.1
Retired person	10	2.4
Unemployed	5	1.2
Income		
Less than 20,001 THB	78	18.4
20,001-40,000 THB	124	29.3
40,001-60,000 THB	41	9.7
60,001-80,000 THB	13	3.1
80,001-100,000 THB	21	5.0
More than 100,000 THB	54	12.8
N/A	92	21.7

4.1.1.2 Travel Experiences

Four behavioral variables on travel experiences are employed to collect quantitative data from low-cost carrier passengers. The reported variables comprise of experiences on-site, accompanying groups, experience of air transport, and experience of airports as follows.

1) Experiences on-site

Main purpose of the trip, times visited the province per year, and transports used to get to the province are relevant proxies in this variable. 60.0% or 254 persons of responded passengers traveled for leisure purposes whereas 14.9 %, 10.6%, 10.4% had other purposes on visiting friends and relatives, business, and MICE. The rests traveled for educational purpose and other purposes.

In this research, asking about experiences on the province refers to the experience of visiting the location where airports are situated. That means Phuket province for Phuket International Airport, Songkhla province for Hat Yai International Airport, Chiang Mai province for Chiang mai International Airport, and Chiang Rai province for Mae Fah Luang Chiang Rai International Airport. From the passengers' responses, 90 (21.3%) were first visitors to the province where airports are located. That is, nearly 80 % of respondents had annual experienced visiting the province at least 1 time. 120 (28.4%) respondents normally have time at the visiting province for 1-2 times a year whereas 81 (19.1%) respondents usually visit the province for more than 10 times a year.

From the respondents' experiences on transport used in the long-distance trip to the studied areas, 52.6% of them normally used low-cost carriers as major modes of transport over private cars (14.1%), public buses (13.2%), full-service carriers (11.7%), trains (3.3%), and rental cars (2.1%) (Table 4.2).

2) Accompanying groups

152 (35.9%) persons of total respondents traveled alone on the date of data collection. 134 (31.7%) respondents traveled with friends or colleagues whereas 74 (17.5%) and 63 (14.9%) persons traveled with their spouses and families. According to the numbers of accompanying persons, 152 (35.9%) passengers who traveled alone did not have any accompanies whereas most of them at 158 (37.4%) persons had only 2 persons in the traveling.

Table 4.2 Frequency and Percentage of Respondents on Travel Experiences

Travel Experiences	n	HKT (%)	HDY (%)	CNX (%)	CEI (%)	Total (%)
Main purpose of the trip	423					
Leisure		83 (65.4)	45 (46.9)	62 (64.6)	64 (61.5)	**254** (60.0)
VFR		13 (10.2)	15 (15.6)	15 (15.6)	20 (19.2)	**63** (14.9)
Business		18 (14.2)	9 (9.4)	10 (10.4%)	8 (7.7)	**45** (10.6)
MICE		6 (4.7)	22 (22.9)	6 (6.3)	10 (9.6)	**44** (10.4)
Education		3 (2.4)	4 (4.2)	3 (3.1)	1 (1.0)	**11** (2.6)
Others		4 (3.1)	1 (1.0)	0 (0.0)	1 (1.0)	**6** (1.4)
Times visited the province	423					
First visiting		29 (22.8)	10 (10.4)	27 (28.1)	24 (23.1)	**90** (21.3)
1-2 times / year		33 (26.0)	21 (21.9)	28 (29.2)	38 (36.5)	**120** (28.4)
3-4 times / year		26 (20.5)	19 (19.8)	11 (11.5)	23 (22.1)	**79** (18.7)
5-6 times / year		6 (4.7)	9 (9.4)	5 (5.2)	5 (4.8)	**25** (5.9)
7-8 times / year		4 (3.1)	5 (5.2)	1 (1.0)	2 (1.9)	**12** (2.8)
9-10 times / year		6 (4.7)	5 (5.2)	3 (3.1)	2 (1.9)	**16** (3.8)
More than 10 times / year		23 (18.1)	27 (28.1)	21 (21.9)	10 (9.6)	**81** (19.1)
Transport normally used	333					
Low-cost carrier		55 (56.1)	50 (58.1)	25 (36.2)	45 (56.3)	**175** (52.6)
Private car		10 (10.2)	12 (14.0)	19 (27.5)	16 (20.0)	**57** (17.1)
Public bus		7 (7.1)	11 (12.8)	15 (21.7)	11 (13.8)	**44** (13.2)
Full-service carrier		21 (21.4)	7 (8.1)	5 (7.2)	6 (7.5)	**39** (11.7)
Train		0 (0.0)	6 (7.0)	4 (5.8)	1 (1.3)	**11** (3.3)
Rental car		5 (5.1)	0 (0.0)	1 (1.4)	1 (1.3)	**7** (2.1)

The rests of respondents with 26.7% traveled with 3 persons (9.5%), 4 persons (6.1%), more than 6 persons (4.7%), 6 persons (3.3%), and 5 persons (3.1%) respectively. From the collected data, most of respondents traveled alone to 4 persons. 94.3% or 399 respondents arranged the trip by themselves whereas just 5.7% or 24 persons chose travel agents to arrange their trip including air ticket (Table 4.3).

Table 4.3 Frequency and Percentage of Respondents on Accompanying Groups

(n = 423)

Accompanying Groups	HKT (%)	HDY (%)	CNX (%)	CEI (%)	Total (%)
Accompanying persons					
Alone	51 (40.2)	34 (35.4)	37 (38.5)	30 (28.8)	**152** (35.9)
Friends / Colleague	42 (33.1)	33 (34.4)	31 (32.3)	28 (26.9)	**134** (31.7)
Spouse	21 (16.5)	12 (12.5)	20 (20.8)	21 (20.2)	**74** (17.5)
Family	13 (10.2)	17 (17.7)	8 (8.3)	25 (24.0)	**63** (14.9)
Number of accompanies					
1 person	51 (40.2)	34 (35.4)	37 (38.5)	30 (28.8)	**152** (35.9)
2 persons	37 (29.1)	35 (36.5)	41 (42.7)	45 (43.3)	**158** (37.4)
3 persons	15 (11.8)	12 (12.5)	5 (5.2)	8 (7.7)	**40** (9.5)
4 persons	12 (9.4)	2 (2.1)	5 (5.2)	7 (6.7)	**26** (6.1)
5 persons	5 (3.9)	2 (2.1)	1 (1.0)	5 (4.8)	**13** (3.1)
6 persons	3 (2.4)	5 (5.2)	1 (1.0)	5 (4.8)	**14** (3.3)
More than 6 persons	4 (3.1)	6 (6.3)	6 (6.3)	4 (3.8)	**20** (4.7)
Travel arrangements					
Own arrangement	115 (90.6)	92 (95.8)	89 (92.7)	103 (99.0)	**399** (94.3)
Package	12 (9.4)	4 (4.2)	7 (7.3)	1 (1.0)	**24** (5.7)

3) Experience of air transport

In this issue, respondents were required to give information on three topics: reasons of choosing low-cost carriers, most frequently used airlines, and experience of domestic LCC flights per year.

'Price' is the favorite reason of choosing low-cost carriers. Above 80% (343) of respondents rated price as the priority reason whereas the others decided to use low-cost carriers with other reasons: flight schedule (6.1%), airline route (4.7%), airport location (2.4%), airline service (2.1%), flight frequencies (2.1%), and booking system (1.4%).

In evaluating airport efficiency, respondents were asked to specify their most experienced domestic airlines. More than 80% of respondents normally used low-cost carriers over the full-service carriers. A half of respondents or 220 (52.0%) persons were familiar with Thai AirAsia whilst 137 (32.4%) passengers frequently used Nok Air and 6 (1.4%) persons chose Orient Thai Airlines as their

domestic flights. However, 46 (10.9%) and 14 (3.3%) persons usually used full-service carriers which are Thai Airways International and Bangkok Airways for their flights within Thailand.

There were 136 (32.2%) respondents flying with low-cost carriers 3-4 flights a year for domestic routes. 118 (27.9%) respondents used local low-cost carriers 1-2 flights per year. However, there were a numbers of respondents who used domestic low-cost flights with 5-6 flights (61 persons), 7-8 flights (16 persons), 9-10 flights (42 persons), and more than 10 flights (50 persons) per annum (Table 4.4).

4) Experience of airports

Numbers of arrival and departure time at the airport, numbers of time flying with LCC at the airport, average time used on the departure and average time used on the arrival are related proxies on airport experiences. 59.1% or 250 persons experienced for 1 to 2 times at target airports in the last 1 year from collecting date. 68 (16.1%) respondents visited the airports as passengers for 3-4 times on the 1-year period whereas the other 35 (8.3%), 31 (7.3%), 20 (4.7%), 19 (4.5%) respondents are dispersed in to the groups of more than 10 times, 5-6 times, 7-8 times, and 9-10 times.

Of the 423 respondents, 63.8% had experiences using low-cost carriers at the airports for 1-2 times back to 1 year. 67 (15.8%) respondents had such experiences for 3-4 times whereas 20.3% of respondents experienced using the carriers at the airports for 5 times to more than 10 times within the last 1 year period.

Respondents spent time at the airports with different duration. For departures, most of respondents at more than 80% spent 30 to 120 minutes at airports whereas less responds utilized time for more than 2 hours. That are, 132 (31.2%), 118 (27.9%), 112 (26.5%) respondents spent 91-120 minutes, 61-90 minutes, and 30-60 minutes on their departures, respectively. On arrivals, over 80% of respondents normally spent time up to 60 minutes. That are, 221 (52.2%) passengers used less than 31 minutes and 131 (31.0%) passengers used 61-90 minutes at airports (Table 4.5).

Table 4.4 Frequency and Percentage of Respondents on Experience of Air Transport

(n = 423)

Experience of Air Transport	HKT (%)	HDY (%)	CNX (%)	CEI (%)	Total (%)
Reasons of choosing LCC					
Price	112	77	76	78	**343**
	(88.2)	(80.2)	(79.2)	(75.0)	(81.1)
Flight schedule	1	7	7	11	**26**
	(0.8)	(7.3)	(7.3)	(10.6)	(6.1)
Airline route	5	4	4	7	**20**
	(3.9)	(4.2)	(4.2)	(6.7)	(4.7)
Airport location	3	1	3	3	**10**
	(2.4)	(1.0)	(3.1)	(2.9)	(2.4)
Airline service	1	3	3	2	**9**
	(0.8)	(3.1)	(3.1)	(1.9)	(2.1)
Flight frequencies	3	1	3	2	**9**
	(2.4)	(1.0)	(3.1)	(1.9)	(2.1)
Booking system	2	3	0	1	**6**
	(1.6)	(3.1)	(0.0)	(1.0)	(1.4)
Frequently used airlines					
Thai AirAsia	69	50	34	67	**220**
	(54.3)	(52.1)	(35.4)	(64.4)	(52.0)
Nok Air	36	38	40	23	**137**
	(28.3)	(39.6)	(41.7)	(22.1)	(32.4)
Thai Airways International	10	5	18	13	**46**
	(7.9)	(5.2)	(18.8)	(12.5)	(10.9)
Bangkok Airways	9	1	4	0	**14**
	(7.1)	(1.0)	(4.2)	(0.0)	(3.3)
Orient Thai Airlines	3	2	0	1	**6**
	(2.4)	(2.1)	(0.0)	(1.0)	(1.4)
Domestic LCC experiences					
1-2 flights / year	30	24	30	34	**118**
	(23.6)	(25.0)	(31.3)	(32.7)	(27.9)
3-4 flights / year	44	22	33	37	**136**
	(34.6)	(22.9)	(34.4)	(35.6)	(32.2)
5-6 flights / year	16	18	12	15	**61**
	(12.6)	(18.8)	(12.5)	(14.4)	14.4)
7-8 flights / year	3	7	0	6	**16**
	(2.4)	(7.3)	(0.0)	(5.8)	(3.8)
9-10 flights / year	16	9	10	7	**42**
	(12.6)	(9.4)	(10.4)	(6.7)	(9.9)
More than 10 flights / year	18	16	11	5	**50**
	(14.2)	(16.7)	(11.5)	(4.8)	(11.8)

Table 4.5 Frequency and Percentage of Respondents on Experience of Airports

(n=423)

Experience of Airports	HKT (%)	HDY (%)	CNX (%)	CEI (%)	Total (%)
Times experienced the airport					
1-2 times	71 (55.9)	44 (45.8)	58 (60.4)	77 (74.0)	**250** (59.1)
3-4 times	21 (16.5)	22 (22.9)	14 (14.6)	11 (10.6)	**68** (16.1)
5-6 times	8 (6.3)	8 (8.3)	8 (8.3)	7 (6.7)	**31** (7.3)
7-8 times	9 (7.1)	6 (6.3)	4 (4.2)	1 (1.0)	**20** (4.7)
9-10 times	6 (4.7)	7 (7.3)	3 (3.1)	3 (2.9)	**19** (4.5)
More than 10 times	12 (9.4)	9 (9.4)	9 (9.4)	5 (4.8)	**35** (8.3)
LCC experiences at the airport					
1-2 times	87 (68.5)	44 (45.8)	61 (63.5)	78 (75.0)	**270** (63.8)
3-4 times	15 (11.8)	25 (26.0)	16 (16.7)	11 (10.6)	**67** (15.8)
5-6 times	10 (7.9)	6 (6.3)	8 (8.3)	5 (4.8)	**29** (6.9)
7-8 times	4 (3.1)	6 (6.3)	2 (2.1)	3 (2.9)	**15** (3.5)
9-10 times	5 (3.9)	5 (5.2)	4 (4.2)	3 (2.9)	**17** (4.0)
More than 10 times	6 (4.7)	10 (10.4)	5 (5.2)	4 3.8)	**25** (5.9)
Average time used on departure					
30-60 minutes	30 (23.6)	20 (20.8)	28 (29.2)	34 (32.7)	**112** (26.5)
61-90 minutes	39 (30.7)	26 (27.1)	20 (20.8)	33 (31.7)	**118** (27.9)
91-120 minutes	45 (35.4)	28 (29.2)	36 (37.5)	23 (22.1)	**132** (31.2)
121-150 minutes	7 (5.5)	6 (6.3)	6 (6.3)	6 (5.8)	**25** (5.9)
151-180 minutes	6 (4.7)	14 (14.6)	3 (3.1)	8 (7.7)	**31** (7.3)
More than 180 minutes	0 (0.0)	2 (2.1)	3 (3.1)	0 (0.0)	**5** (1.2)
Average time used on arrival					
Less than 31 minutes	55 (43.3)	44 (45.8)	57 (59.4)	65 (62.5)	**221** (52.2)
31-60 minutes	53 (41.7)	33 (34.4)	24 (25.0)	21 (20.2)	**131** (31.0)
61-90 minutes	13 (10.2)	8 (8.3)	9 (9.4)	8 (7.7)	**38** (9.0)
91-120 minutes	4 (3.1)	10 (10.4)	5 (5.2)	5 (4.8)	**24** (5.7)
121-150 minutes	1 (0.8)	1 (1.0)	1 (1.0)	1 (1.0)	**4** (0.9)
Over 150 minutes	1 (0.8)	0 (0.0)	0 (0.0)	4 (3.8)	**5** (1.2)

4.1.1.3 Levels of importance and efficiency toward airports' operational attributes and airports' operational procedures

Both importance and efficiency levels were evaluated by low-cost carrier passengers using six-level evaluation. Level 6 is the maximum score referred to 'Strongly important' or 'Strongly efficient' whereas level 1 reflects 'Strongly unimportant' and 'Strongly inefficient'.

1) Description on Importance Levels

Results on importance levels were described in a relation to six levels. The six levels comprise of these following levels and statements.

6: Strongly important

5: Important

4: Somewhat important

3: Somewhat unimportant

2: Unimportant

1: Strongly unimportant

Level 1 to 3 mainly referred to negative levels of importance whereas level 4 to 6 referred to positive levels of importance. On average of 33 operational attributes, among six levels of importance, the highest frequency was dropped into the level of 'Important' (33.3%) following by 'Strongly important' level (30.6%) and 'Somewhat important' level (23.1%). This means most of respondents rated airport operational attributes at the positive levels over the negative levels. Similarly, in the evaluation on nine operational procedures' importance, average results showed that 42.7% of the results were dropped in the 'Importance' level whereas 27.0% belonged to 'Strongly important' level (Figure 4.1).

Among all 33 airports' operational attributes, twelve attributes were rated at 'Strongly important' or the 6^{th} level. Those 12 attributes comprised of parking 1) facilities (30.7%, $\bar{x}$ = 4.38), 2) flight information screen (45.9%, $\bar{x}$ = 5.15), 3) information signs (46.6%, $\bar{x}$ = 5.22), 4) airport staff (38.1%, $\bar{x}$ = 5.08), 5) security screening (59.8%, $\bar{x}$ = 5.38), 6) check-in counters (44.7%, $\bar{x}$ = 5.23), 7) baggage check-in (41.1%, $\bar{x}$ = 5.18), 8) safety measures (54.1%, $\bar{x}$ = 5.29), 9) security staff

(52.0%, $\bar{x}$ = 5.30), 10) health services (38.1%, $\bar{x}$ = 4.97), 11) washroom / toilets (55.8%, $\bar{x}$ = 5.42), and 12) Wi-Fi / internet services (55.1% , $\bar{x}$ = 5.21).

There were 14 operation attributes were mainly evaluated at level 5 which was the 'Important' level. Fifteen attributes were compounded with 1) accessibility to the airport (38.3%, $\bar{x}$ = 4.97), 2) seat assignment & waiting area (40.2%, $\bar{x}$ = 4.77), 3) stairway / lifts / escalators (36.6%, $\bar{x}$ = 4.56), 4) information desk / counters (31.4%, $\bar{x}$ = 4.71), 5) broadcasting / announcement (33.8%, $\bar{x}$ = 4.80), 6) departure hall (41.8%, $\bar{x}$ = 4.77), 7) aerobridges / connecting gate (40.9%, $\bar{x}$ = 4.78), 8) passenger steps / airfield buses (40.0%, $\bar{x}$ = 4.90), 9) arrival hall (40.4%, $\bar{x}$ = 4.68), 10) baggage claiming system (41.4%, $\bar{x}$ = 4.99), 11) baggage belts (41.4%, $\bar{x}$ = 4.90), 12) baggage drop service (35.7%, $\bar{x}$ = 4.51), 13) baggage carts / trolley (37.6%, $\bar{x}$ = 4.74), and 14) banks / exchange services (35.2%, $\bar{x}$ = 4.59).

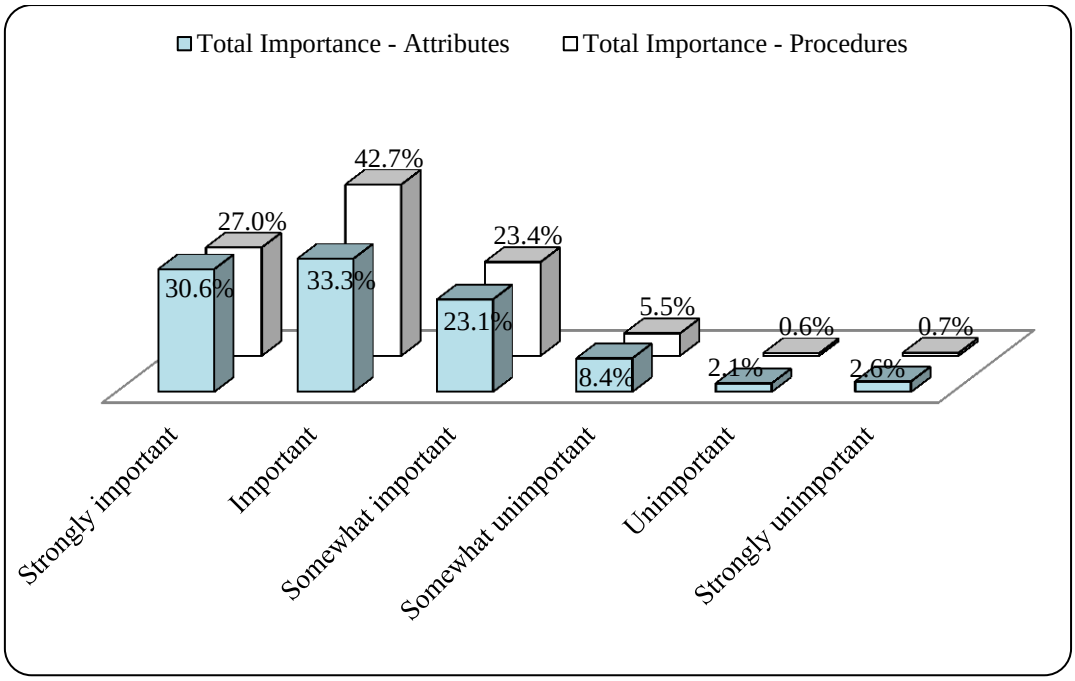


Figure 4.1 Average Percentage on Importance Levels toward Airports' Operational Attributes and Airports' Operational Procedures

The rest seven airport operational attributes were mostly assessed at level 4 or 'Somewhat important'. The six attributes included 1) retail shops (36.6%, $\bar{x}$ = 3.95), 2) restaurant / eating facilities (38.8%, $\bar{x}$ = 4.22), 3) tour / hotel services (32.2%, $\bar{x}$ = 4.07), 4) car rental facilities / taxi (32.9%, $\bar{x}$ = 4.13), 5) prayer room (27.0%, $\bar{x}$ = 3.85), 6) post office (32.2%, $\bar{x}$ = 3.80), and 7) public telephone (30.0, $\bar{x}$ = 4.00). Table 4.6 illustrated the overall results of airport operational attributes retrieved by domestic low-cost carrier passengers.

Table 4.6 Frequency and Percentage on Levels of Importance toward Airports' Operational Attributes

(n = 423)

Operational Attributes	Strongly important (6)	Important (5)	Somewhat important (4)	Somewhat unimportant (3)	Unimportant (2)	Strongly unimportant (1)	$\bar{x}$	S.D.
1. Accessibility to the airport	150 (35.5)	162 (38.3)	79 (18.7)	21 (5.0)	4 (.9)	7 (1.7)	4.97	1.045
2. Parking facilities	130 (30.7)	112 (26.5)	80 (18.9)	33 (7.8)	24 (5.7)	44 (10.4)	4.38	1.612
3. Seat assignment & waiting area	107 (25.3)	170 (40.2)	99 (23.4)	38 (9.0)	6 (1.4)	3 (.7)	4.77	.835
4. Stairway / lifts / escalators	88 (20.8)	155 (36.6)	117 (27.7	39 (9.2)	15 (3.5)	9 (2.1)	4.56	1.148
5. Information desk / counters	119 (28.1)	133 (31.4)	119 (28.1	39 (9.2)	8 (1.9)	5 (1.2)	4.71	1.100
6. Flight information screen	194 (45.9)	139 (32.9)	58 (13.7	26 (6.1)	3 (.7)	3 (.7)	5.15	1.000
7. Broadcasting / announcement	133 (31.4)	143 (33.8)	99 (23.4	32 (7.6)	9 (2.1)	7 (1.7)	4.80	1.127
8. Information signs	197 (46.6)	152 (35.9)	53 (12.5	12 (2.8)	7 (1.7)	2 (.5)	5.22	.941
9. Airport staff	161 (38.1)	160 (37.8)	84 (19.9	14 (3.3)	1 (.2)	3 (.7)	5.08	.918
10. Security screening	253 (59.8)	104 (24.6)	49 (11.6	10 (2.4)	4 (.9)	3 (.7)	5.38	.931
11. Check-in counters	189 (44.7)	166 (39.2)	52 (12.3	10 (2.4)	4 (.9)	2 (.5)	5.23	.8971
12. Baggage check-in	174 (41.1)	172 (40.7)	63 (14.9	10 (2.4)	1 (.2)	3 (.7)	5.18	.871
13. Retail shops	30 (7.1)	106 (25.1)	155 (36.6	93 (22.0)	21 (5.0)	18 (4.3)	3.95	1.156
14. Restaurant / eating facilities	48 (11.3)	122 (28.8)	164 (38.8	64 (15.1)	14 (3.3)	11 (2.6)	4.22	1.322
15. Departure hall	99 (23.4)	177 (41.8)	111 (26.2	27 (6.4)	4 (.9)	5 (1.2)	4.77	.987
16. Aerobridges / connecting gate	102 (24.1)	173 (40.9)	111 (26.2	30 (7.1)	4 (.9)	3 (.7)	4.78	.969
17. Passenger steps / airfield buses	121 (28.6)	169 (40.0)	110 (26.0	18 (4.3)	2 (.5)	3 (.7)	4.90	.930

Table 4.6 (Continued)

(n = 423)

Operational Attributes	Strongly important (6)	Important (5)	Somewhat important (4)	Somewhat unimportant (3)	Unimportant (2)	Strongly unimportant (1)	$\bar{x}$	S.D.
18. Arrival hall	86 (20.3)	171 (40.4)	121 (28.6	38 (9.0)	4 (.9)	3 (.7)	4.68	.973
19. Baggage claiming system	134 (31.7)	175 (41.4)	95 (22.5)	15 (3.5)	3 (.7)	1 (.2)	4.99	.887
20. Baggage belts (arrival)	119 (28.1)	175 (41.4)	101 (23.9)	23 (5.4)	4 (.9)	1 (.2)	4.90	.923
21. Baggage drop service	82 (19.4)	151 (35.7)	117 (27.7)	53 (12.5)	12 (2.8)	8 (1.9)	4.51	1.135
22. Baggage carts / trolley	106 (25.1)	159 (37.6)	110 (26.0)	40 (9.5)	7 (1.7)	1 (.2)	4.74	1.006
23. Tour / hotel services	52 (12.3)	107 (25.3)	136 (32.2)	86 (20.3)	29 (6.9)	13 (3.1)	4.07	1.224
24. Car rental facilities / taxi	52 (12.3)	120 (28.4)	139 (32.9)	71 (16.8)	25 (5.9)	16 (3.8)	4.13	1.227
25. Safety measures	229 (54.1)	118 (27.9)	55 (13.0)	16 (3.8)	2 (.5)	3 (.7)	5.29	.946
26. Security staff	220 (52.0)	135 (31.9)	53 (12.5)	10 (2.4)	2 (.5)	3 (.7)	5.30	.897
27. Health services	161 (38.1)	134 (31.7)	98 (23.2)	18 (4.3)	7 (1.7)	5 (1.2)	4.97	1.04
28. Washrooms / toilets	236 (55.8)	138 (32.6)	41 (9.7)	7 (1.7)	0 (0.0)	1 (.2)	5.42	.765
29. Prayer room	74 (17.5)	85 (20.1)	114 (27.0)	69 (16.3)	16 (3.8)	65 (15.4)	3.85	1.607
30. Banks / exchange services	101 (23.9)	149 (35.2)	112 (26.5)	37 (8.7)	6 (1.4)	18 (4.3)	4.59	1.222
31. Post office	36 (8.5)	101 (23.9)	136 (32.2)	85 (20.1)	21 (5.0)	44 (10.4)	3.80	1.230
32. Public telephone	56 (13.2)	112 (26.5)	127 (30.0)	72 (17.0)	16 (3.8)	40 (9.5)	4.00	1.404
33. Wi-Fi / internet services	233 (55.1)	99 (23.4)	62 (14.7)	11 (2.6)	10 (2.4)	8 (1.9)	5.21	1.130
Total Importance: Attributes	**4272 (30.6)**	**4644 (33.3)**	**3220 (23.1)**	**1167 (8.4)**	**295 (2.1)**	**361 (2.6)**	**4.74**	**.636**

In terms of nine operational procedures, four arrival procedures and five departure procedures were evaluated. All nine airport operational procedures were rated as 'Important' which referred to level 5. The 9 procedures comprised of 1) airplane to arrival hall (40.0%, $\bar{x}$ = 4.79), 2) arrival hall to baggage claim (43.3%, $\bar{x}$ =4.89), 3) baggage claim to public/retail services (40.4%, $\bar{x}$ =4.59), 4) terminal gate to ground transport (41.8%, $\bar{x}$ = 4.86), 5) ground transport to terminal (43.3%, $\bar{x}$ = 4.89), 6) terminal gate to check-in counters (46.8%, $\bar{x}$ = 4.94), 7) check-in counters to security screening (43.3%, $\bar{x}$ = 4.95), 8) security screening to departure hall (42.8%, $\bar{x}$

= 5.00), and 9) departure hall to airplane (42.8%, $\bar{x}$ = 4.99). Average importance score were in level 5 or 'Important' (42.7%, $\bar{x}$ = 4.88) as well. Average score of departure procedures ($\bar{x}$ = 4.95) were higher than one of the arrival procedures ($\bar{x}$ = 4.78) (Table 4.7).

Table 4.7 Frequency and Percentage on Levels of Importance toward Airports' Operational Procedures

(n = 423)

Operational Procedures	Strongly important (6)	Important (5)	Somewhat important (4)	Somewhat unimportant (3)	Unimportant (2)	Strongly unimportant (1)	$\bar{x}$	S.D.
1. Airplane to arrival hall (Deplane)	110	169	106	28	4	6	4.79	1.023
	(26.0)	(40.0)	(25.1)	(6.6)	(.9)	(1.4)		
2. Arrival hall to baggage claim	111	183	104	21	3	1	4.89	.893
	(26.2)	(43.3)	(24.6)	(5.0)	(.7)	(.2)		
3. Baggage claim to public/retails services	78	171	116	45	8	5	4.59	1.040
	(18.4)	(40.4)	(27.4)	(10.6)	(1.9)	(1.2)		
4. Terminal gate to ground transport	113	177	102	27	1	3	4.86	.939
	(26.7)	(41.8)	(24.1)	(6.4)	(.2)	(.7)		
Total Importance: Arrival Procedures	***412***	***700***	***428***	***121***	***16***	***15***	***4.78***	***.862***
	(24.3)	***(41.4)***	***(25.3)***	***(7.2)***	***(0.9)***	***(0.9)***		
5. Ground transport to terminal	116	183	95	22	3	4	4.89	.955
	(27.4)	(43.3)	(22.5)	(5.2)	(.7)	(.9)		
6. Terminal gate to check-in counters	113	198	94	14	1	3	4.94	.869
	(26.7)	(46.8)	(22.2)	(3.3)	(.2)	(.7)		
7. Check-in counters to security screening	125	183	90	21	2	2	4.95	.908
	(29.6)	(43.3)	(21.3)	(5.0)	(.5)	(.5)		
8. Security screening to departure hall	134	181	86	19	1	2	5.00	.894
	(31.7)	(42.8)	(20.3)	(4.5)	(.2)	(.5)		
9. Departure hall to airplane (Enplane)	129	181	97	14	1	1	4.99	.853
	(30.5)	(42.8)	(22.9)	(3.3)	(.2)	(.2)		
Total Importance: Departure Procedures	***617***	***926***	***462***	***90***	***8***	***12***	***4.95***	***.781***
	(29.2)	***(43.8)***	***(21.8)***	***(4.3)***	***(0.4)***	***(0.6)***		
Total Importance: Procedures	**1029**	**1626**	**890**	**211**	**24**	**27**	**4.88**	.777
	(27.0)	(42.7)	(23.4)	(5.5)	(0.6)	(0.7)		

2) Description on Efficiency Levels

In similar to importance levels, results on efficiency levels were described in a relation to six levels as following stated.

6: Strongly efficient

5: Efficient

4: Somewhat efficient

3: Somewhat inefficient

2: Inefficient

1: Strongly inefficient

Level 1 to 3 mainly referred to negative efficiency levels whereas level 4 to 6 referred to positive efficiency levels. On average of 33 operational attributes, among six levels of efficiency, the highest frequency was dropped into the level of 'Somewhat efficient' (40.5%) following by 'Efficient' level (28.6%) and 'Somewhat inefficient' level (15.1%). This means most of respondents evaluated airport operational attributes at the positive levels over the negative levels of efficiency. Similarly, in the evaluation on nine operational procedures' efficiency, average results showed that 50.4% of the results were dropped in the 'Somewhat efficient' level whereas 30.7% belonged to 'Efficient' level (Figure 4.2).

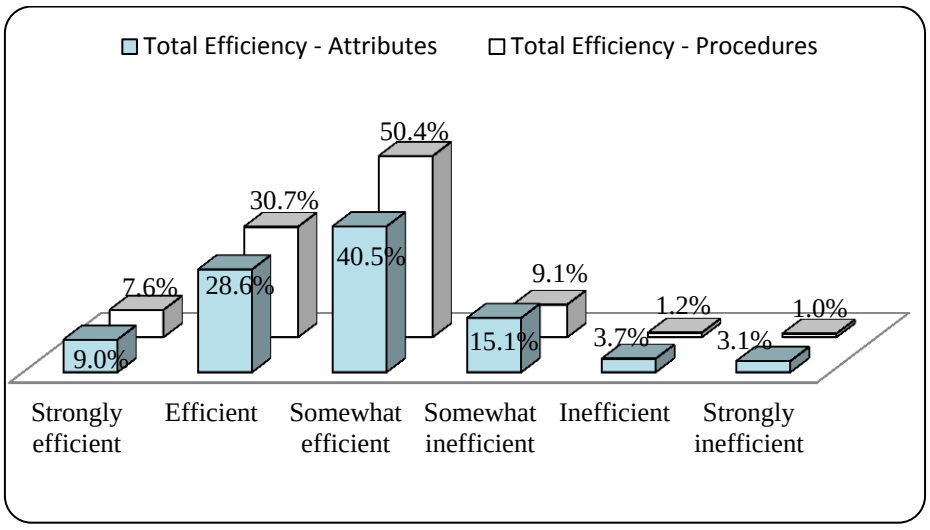


Figure 4.2 Average Percentage on Efficiency Levels toward Airports' Operational Attributes and Airports' Operational Procedures

Likewise, the 33 operational attributes were evaluated how efficient Thailand airports performed. Most of attributes were evaluated to be ‘Somewhat efficient’ or level 4. That are, twenty nine operational attributes had highest percentage at ‘Somewhat efficient’ level. The 29 attributes consisted of 1) accessibility to the airport (39.2%, $\bar{x}$ = 4.41), 2) parking facilities (38.6%, $\bar{x}$ = 3.92), 3) seat assignment & waiting area (43.0%, $\bar{x}$ = 4.18), 4) stairway / lifts / escalators (43.8%, $\bar{x}$ = 4.20), 5) information desk / counters (47.0%, $\bar{x}$ = 4.07), 6) flight information screen (41.8%, $\bar{x}$ = 4.25), 7) broadcasting / announcement (45.6%, $\bar{x}$ = 4.26), 8) information signs (42.1%, $\bar{x}$ = 4.31), 9) airport staff (41.1%, $\bar{x}$ = 4.34), 10) security screening (34.8%, $\bar{x}$ = 4.46), 11) retail shops (43.9%, $\bar{x}$ =3.75), 12) restaurant / eating facilities (40.6%, $\bar{x}$ = 3.69), 13) departure hall (46.6%, $\bar{x}$ = 4.12), 14) aerobridges / connecting gate (44.2%, $\bar{x}$ = 4.24), 15) passenger steps / airfield buses (46.0%, $\bar{x}$ = 3.92), 16) arrival hall (48.7%, $\bar{x}$ = 4.17), 17) baggage claiming system (49.2%, $\bar{x}$ = 4.27), 18) baggage belts (47.0%, $\bar{x}$ = 4.21), 19) baggage drop service (42.6%, $\bar{x}$ = 4.09), 20) tour / hotel services (45.1%, $\bar{x}$ = 4.01), 21) car rental facilities / taxi (41.2%, $\bar{x}$ = 4.07), 22) safety measures (37.4%, $\bar{x}$ = 4.43), 23) security staff (41.4%, $\bar{x}$ = 4.36), 24) health services (42.1%, $\bar{x}$ = 4.17), 25) washrooms / toilets (35.7%, $\bar{x}$ = 4.30), 26) prayer room (39.6%, $\bar{x}$ = 4.08), 27) banks / exchange services (42.6%, $\bar{x}$ = 4.17), 28) post office (40.4%, $\bar{x}$ = 4.02), and 29) public telephone (39.8%, $\bar{x}$ = 4.05).

There were just three attributes were rated mostly at level 5 ‘Efficient’. The 3 attributes were 1) check-in counters (42.8%, $\bar{x}$ = 4.56), 2) baggage check-in (39.2%, $\bar{x}$ = 4.49), and 3) baggage carts / trolleys (41.9%, $\bar{x}$ = 4.47). Only ‘Wi-Fi / internet services’ was frequently evaluated at ‘Strongly Inefficient’ level with 168 respondents (39.7%, $\bar{x}$ = 2.49) (Table 4.8).

Table 4.8 Frequency and Percentage on Levels of Efficiency toward Airports' Operational Attributes

Operational Attributes	n	Strongly efficient (6)	Efficient (5)	Somewhat efficient (4)	Somewhat inefficient (3)	Inefficient (2)	Strongly inefficient (1)	$\bar{x}$	S.D.
1. Accessibility to the airport	423	66 (15.6)	125 (29.6)	166 (39.2)	53 (12.5)	7 (1.7)	6 (1.4)	4.41	1.037
2. Parking facilities	345	26 (7.5)	81 (23.5)	133 (38.6)	62 (18.0)	29 (8.4)	14 (4.1)	3.92	1.189
3. Seat assignment & waiting area	423	28 (6.6)	133 (31.4)	182 (43.0)	57 (13.5)	14 (3.3)	9 (2.1)	4.18	1.004
4. Stairway / lifts / escalators	402	33 (8.2)	116 (28.9)	176 (43.8)	59 (14.7)	13 (3.2)	5 (1.2)	4.20	.983
5. Information desk / counters	370	26 (7.0)	88 (23.8)	174 (47.0)	60 (16.2)	11 (3.0)	11 (3.0)	4.07	1.032
6. Flight information screen	423	43 (10.2)	122 (28.8)	177 (41.8)	64 (15.1)	12 (2.8)	5 (1.2)	4.25	1.003
7. Broadcasting / announcement	423	41 (9.7)	122 (28.8)	193 (45.6)	48 (11.3)	13 (3.1)	6 (1.4)	4.26	.986
8. Information signs	423	38 (9.0)	141 (33.3)	178 (42.1)	52 (12.3)	7 (1.7)	7 (1.7)	4.31	.969
9. Airport staff	423	54 (12.8)	125 (29.6)	174 (41.1)	58 (13.7)	5 (1.2)	7 (1.7)	4.34	1.013
10. Security screening	423	69 (16.3)	144 (34.0)	147 (34.8)	45 (10.6)	11 (2.6)	7 (1.7)	4.46	1.070
11. Check-in counters	423	61 (14.4)	181 (42.8)	132 (31.2)	37 (8.7)	8 (1.9)	4 (.9)	4.56	.969
12. Baggage check-in	423	51 (12.1)	166 (39.2)	160 (37.8)	34 (8.0)	10 (2.4)	2 (.5)	4.49	.923
13. Retail shops	396	13 (3.3)	70 (17.7)	174 (43.9)	96 (24.2)	30 (7.6)	13 (3.3)	3.75	1.044
14. Restaurant / eating facilities	389	16 (4.1)	62 (15.9)	158 (40.6)	102 (26.2)	39 (10.0)	12 (3.1)	3.69	1.081
15. Departure hall	423	21 (5.0)	120 (28.4)	197 (46.6)	64 (15.1)	14 (3.3)	7 (1.7)	4.12	.951
16. Aerobridges / connecting gate	423	30 (7.1)	130 (30.7)	187 (44.2)	67 (15.8)	7 (1.7)	2 (.5)	4.24	.951
17. Passenger steps / airfield buses	324	13 (4.0)	72 (22.2)	149 (46.0)	68 (21.0)	10 (3.1)	12 (3.7)	3.92	1.023
18. Arrival hall	423	28 (6.6)	112 (26.5)	206 (48.7)	60 (14.2)	14 (3.3)	3 (.7)	4.17	.917
19. Baggage claiming system	423	37 (8.7)	114 (27.0)	208 (49.2)	55 (13.0)	7 (1.7)	2 (.5)	4.27	.888
20. Baggage belts (arrival)	423	36 (8.5)	109 (25.8)	199 (47.0)	67 (15.8)	10 (2.4)	2 (.5)	4.21	.923
21. Baggage drop service	296	17 (5.7)	82 (27.7)	126 (42.6)	59 (19.9)	5 (1.7)	7 (2.4)	4.09	.991
22. Baggage carts / trolley	422	44 (10.4)	177 (41.9)	147 (34.8)	42 (10.0)	11 (2.6)	1 (.2)	4.47	.918

Table 4.8 (Continued)

Operational Attributes	n	Strongly efficient (6)	Efficient (5)	Somewhat efficient (4)	Somewhat inefficient (3)	Inefficient (2)	Strongly inefficient (1)	$\bar{x}$	S.D.
23. Tour / hotel services	295	20 (6.8)	65 (22.0)	133 (45.1)	58 (19.7)	14 (4.7)	5 (1.7)	4.01	1.017
24. Car rental facilities / taxi	289	21 (7.3)	79 (27.3)	119 (41.2)	51 (17.6)	8 (2.8)	11 (3.8)	4.07	1.092
25. Safety measures	423	65 (15.4)	137 (32.4)	158 (37.4)	46 (10.9)	12 (2.8)	5 (1.2)	4.43	1.041
26. Security staff	423	53 (12.5)	132 (31.2)	175 (41.4)	44 (10.4)	14 (3.3)	5 (1.2)	4.36	1.015
27. Health services	254	26 (10.2)	72 (28.3)	107 (42.1)	29 (11.4)	9 (3.5)	11 (4.3)	4.17	1.146
28. Washrooms / toilets	423	52 (12.3)	135 (31.9)	151 (35.7)	64 (15.1)	13 (3.1)	8 (1.9)	4.30	1.082
29. Prayer room	212	16 (7.5)	59 (27.8)	84 (39.6)	38 (17.9)	8 (3.8)	7 (3.3)	4.08	1.099
30. Banks / exchange services	305	24 (7.9)	89 (29.2)	130 (42.6)	48 (15.7)	6 (2.0)	8 (2.6)	4.17	1.026
31. Post office	240	18 (7.5)	56 (23.3)	97 (40.4)	54 (22.5)	11 (4.6)	4 (1.7)	4.02	1.047
32. Public telephone	261	18 (6.9)	72 (27.6)	104 (39.8)	48 (18.4)	10 (3.8)	9 (3.4)	4.05	1.096
33. Wi-Fi / internet services	423	15 (3.5)	44 (10.4)	57 (13.5)	69 (16.3)	70 (16.5)	168 (39.7)	2.49	1.539
Total Efficiency	**12402**	**1119** (9.0)	**3543** (28.6)	**5027** (40.5)	**1868** (15.1)	**465** (3.7)	**380** (3.1)	**4.21**	**.668**

Nine operational procedures were also assessed by low-cost carrier passengers on efficiency levels. All operational procedures were rated mostly at 'Somewhat efficient' level. The procedures contained of four arrival procedures and five departure procedures. Four arrival procedures where were frequently appraised at the fourth efficiency level encompassed 1) airplane to arrival hall (57.7%, $\bar{x}$ = 4.18), 2) arrival hall to baggage claim (53.7%, $\bar{x}$ = 4.33), 3) baggage claim to public/retails services (51.8%, $\bar{x}$ = 4.29), and 4) terminal gate to ground transport (53.0%, $\bar{x}$ = 4.20). Five procedures on departure were 1) ground transport to terminal (46.8%, $\bar{x}$ = 4.24), 2) terminal gate to check-in counters (50.1%, $\bar{x}$ = 4.39), 3) check-in counters to security screening (48.2%, $\bar{x}$ = 4.38), 4) security screening to departure hall (43.5%, $\bar{x}$ = 4.47), and 5) departure hall to airplane (46.1%, $\bar{x}$ = 4.39). In addition,

average scores of arrival procedures and departure procedures were 4.25 and 4.32 where both reflected to 'Somewhat efficient' level (Table 4.9).

Table 4.9 Frequency and Percentage on Levels of Efficiency toward Airports' Operational Procedures

Operational Procedures	n	Strongly efficient (6)	Efficient (5)	Somewhat efficient (4)	Somewhat inefficient (3)	Inefficient (2)	Strongly inefficient (1)	$\bar{x}$	S.D.
1. Airplane to arrival hall (Deplane)	423	19 (4.5)	109 (25.8)	244 (57.7)	38 (9.0)	7 (1.7)	6 (1.4)	4.18	.830
2. Arrival hall to baggage claim	423	26 (6.1)	133 (31.4)	227 (53.7)	32 (7.6)	1 (.2)	4 (.9)	4.33	.790
3. Baggage claim to public/ retails services	423	21 (5.0)	138 (32.6)	219 (51.8)	37 (8.7)	5 (1.2)	3 (.7)	4.29	.799
4. Terminal gate to ground transport	423	29 (6.9)	108 (25.5)	224 (53.0)	49 (11.6)	6 (1.4)	7 (1.7)	4.20	.920
Total Efficiency: Arrival Procedures	***1692***	***95 (5.6)***	***488 (28.8)***	***914 (54.0)***	***156 (9.2)***	***19 (1.1)***	***20 (1.2)***	***4.25***	***.717***
5.									
6. Ground transport to terminal	423	30 (7.1)	128 (30.3)	198 (46.8)	54 (12.8)	7 (1.7)	6 (1.4)	4.24	.923
7. Terminal gate to check-in counters	423	43 (10.2)	130 (30.7)	212 (50.1)	27 (6.4)	8 (1.9)	3 (.7)	4.39	.877
8. Check-in counters to security screening	423	42 (9.9)	131 (31.0)	204 (48.2)	40 (9.5)	4 (.9)	2 (.5)	4.38	.859
9. Security screening to departure hall	423	42 (9.9)	159 (37.6)	184 (43.5)	32 (7.6)	5 (1.2)	1 (.2)	4.47	.837
10. Departure hall to airplane (Enplane)	154	16 (10.4)	51 (33.1)	71 (46.1)	12 (7.8)	1 (.6)	3 (1.9)	4.39	.938
Total Efficiency: Departure Procedures	***1846***	***173 (9.4)***	***599 (32.4)***	***869 (47.1)***	***165 (8.9)***	***25 (1.4)***	***15 (0.8)***	***4.32***	***.809***
Total Efficiency: Total Procedures	**3538**	**268 (7.6)**	**1087 (30.7)**	**1783 (50.4)**	**321 (9.1)**	**44 (1.2)**	**35 (1.0)**	**4.26**	**.746**

4.1.1.4 Suggestions on airport operational attributes and procedures

As open-ended questions had been added in the questionnaire of low-cost carrier passengers, a number of suggestions were derived. 172 (40.7%) persons from total respondents put their additional suggestions on airport services and operations. 36.0% of responded passengers suggested airports to provide free Wi-Fi services whereas 16.9% needed departure lounge for low-cost carrier passengers. In

addition, some respondents required a variety of shops & restaurants (11.0%), drinking water station (5.8%), better ground transport (4.7%), better information signs (2.9%), and better check-in counters (2.9%) (Table 4.10).

Table 4.10 Frequency and Percentage on Passengers' Suggestions

Items	Frequency	Percentage (%)
Free Wi-Fi	62	36.0
Departure lounge	29	16.9
Varieties of shops & restaurants	19	11.0
Free drinking water / station	10	5.8
Ground transport (airport-town)	8	4.7
Information signs & screen	5	2.9
Check-in counter (numbers, location)	5	2.9
Staff service	3	1.7
High price taxi service	3	1.7
Waiting area	3	1.7
Car parking lots	3	1.7
Expensive food & goods	3	1.7
Smoking area	2	1.2
Restrooms (Cleanliness & Comfortable)	2	1.2
Overnight place	2	1.2
Tour & hotel information	2	1.2
Area for children	2	1.2
Battery charging area	1	0.6
Terminal renovation	1	0.6
English speaking staff	1	0.6
Cold air-condition	1	0.6
Halal food	1	0.6
Announcement (different language)	1	0.6
Scales for baggage before check-in	1	0.6
Safety	1	0.6
Facilities for handicap	1	0.6

4.1.2 Qualitative Descriptive Results

4.1.2.1 Respondents' profiles

As informed in Chapter 3, there are three groups of respondents associated to the interviews—a tool in qualitative research method. Three interviewing groups comprise of 1) low-cost carrier staff, 2) airport executives, and 3) low-cost carrier passengers (Appendix D). For the first group, this research collected data from both station managers or supervisors and operational low-cost carrier staff with different positions.

A researcher has interviewed 30 low-cost carrier staff with 8 supervisory staff and 22 operational staff. Also, 7 airport executives who were dealing with airports' service tasks from 4 airports allowed a researcher to make the interviews. Last, 27 low-cost carrier passengers are invited to cooperate the interviews (Table 4.11).

Table 4.11 Number of Interviewees at Each Airport

Airport / Respondents	LCC Staff	Airport Executives	LCC Passengers
HKT	10	1	6
HDY	4	1	7
CNX	8	3	5
CEI	8	2	9
Total	**30**	**7**	**27**

4.1.2.2 Interview questions

Each group of respondents has five similar interview questions (Table 4.12) comprising of;

1) Respondents' profiles
2) Important issues on airport operation
3) Efficiently operated issues
4) Operational areas to be improved
5) Other suggestions on airport

Table 4.12 Interview Questions for Three Responded Groups

Issues, Interviewees, Questions	LCC Passengers (P)	LCC Staff (L)	Airport Executives (A)
Question 1: Respondents' profiles	QP1: 'Could you please introduce yourself and your travel experiences?'	QL1: 'Could you please introduce yourself and your work experience?'	QA1: 'Could you please tell me about your working experience?'
Question 2: Important issues on airport operation	QP2: 'As a passenger, what are important things for passengers that airport should realize?'	QL2: 'What are important things about carriers and passengers that airports should realize?	QA2: 'What are important things about the carriers and passengers that this is airport concerned about?
Question 3: Efficiently operated issues	QP3: 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'	QL3: 'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?'	QA3: 'Could you please tell me anything that this airport could efficiently perform?'
Question 4: Operational areas to be improved	QP4: 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'	QL4: 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'	QA4: 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'
Question 5: Other suggestions on airport	QP5: 'Apart from what we have discussed, what are your other suggestions for this airport?'	QL5: 'Apart from what we have discussed, what are your other suggestions for this airport?'	QA5: 'Apart from what we have discussed, what are your other ideas on airport operation?'

Note: QP: Interview question for low-cost carrier passengers

QL: Interview question for low-cost carrier staff

QA: Interview question for airport executives

The 1st question which refers to respondents' personal profiles and background is skipped in this section due to ethic reasons. Interview questions for low-cost carrier staff and airport executives are mainly aimed at studying the operational efficiency of Thailand airport from low-cost carriers' perspectives which is research objective 1. At the same time, interview results from these two target respondents are used to support and explain the quantitative results on low-cost passengers' service requirements toward Thailand airports' operational attributes. Similarly, passenger interviews are proposed to support the quantitative results on importance, efficiency, and requirements on airport operational attributes (Table 4.13) (Appendix C).

4.1.2.3 Interview results

In this section, interview results were described by each interview question excluding the 1st question. Question number 2 was used to explore important issues that airports should realize in order to serve low-cost carriers and their passengers whereas interview question number 3 was aimed at investigating efficient performance of airports from the views of low-cost carrier staff and low-cost carrier passengers. Improvement areas were suggested following the 4th interview question whilst other suggestions on airports were required for the 5th question.

1) Question 2: Important issues

The passengers, low-cost carrier staff, and airport executives raised several important issues. Those important things were grouped into six categories as follows (Table 4.14).

(1) Airport safety & security

Safety & security is the most concerned factor among passengers and low-cost carrier staff. Everyone wanted to be secured and safe once they have arrived or worked at airports. Both arrival and departure trip must be safe for passengers. Safety & security referred to safety measures, safety equipment, and security staff.

Table 4.13 Research Objectives, Research Questions, Main Interview Questions, and Respondents on Qualitative Research Methods

Research Objectives	Related Research Questions	Interview Questions: LCC Staff (QL)	Interview Questions: Airport Executives (QA)	Interview Questions: LCC Passengers (QP)
(Obj. 1) To study the operational efficiency of Thailand airport from low-cost carriers' perspectives	(1) What operational areas are important for low-cost carriers?	QL2. 'What are important things about carriers and passengers that airports should realize? QL.5'Apart from what we have discussed, what are your other suggestions for this airport?'	QA2.'What are important things about the carriers and passengers that this airport concern about? QA5.'Apart from what we have discussed, what are your other ideas on airport operation?'	-
	(2) What operational areas could Thailand airports efficiently perform?	QL3.'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?' QL5.'Apart from what we have discussed, what are your other suggestions for this airport?'	QA3.'Could you please tell me anything that this airport could efficiently perform?' QA5.'Apart from what we have discussed, what are your other ideas on airport operation?'	-
	(3) What operational areas should Thailand airports improve?	QL4.'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?' QL5.'Apart from what we have discussed, what are your other suggestions for this airport?'	QA4. 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?' QA5.'Apart from what we have discussed, what are your other ideas on airport operation?'	-

Table 4.13 (Continued)

Research Objectives	Related Research Questions	Interview Questions: LCC Staff (QL)	Interview Questions: Airport Executives (QA)	Interview Questions: LCC Passengers (QP)
(Obj. 2) To investigate levels of importance and efficiency in operational attributes and operational procedures of Thailand airports	(4) What are the importance levels for Thailand airports' operational attributes and operational procedures?	-	-	QP2. 'As a passenger, what are important things for passengers that airport should realize? QP5. 'Apart from what we have discussed, what are your other suggestions for this airport?'
	(7) What are the efficiency levels for Thailand airports' operational attributes and operational procedures?	-	-	QP3. 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?' QP5. 'Apart from what we have discussed, what are your other suggestions for this airport?'
Obj. 3) To analyze low-cost carrier passengers' service requirements toward Thailand airports' operational attributes	(10) What operational attributes of Thailand airports show significant gaps between efficiency levels and importance levels? (11) What operational procedures of Thailand airports show significant gaps between efficiency levels and importance levels?	QL2., QL3., QL4., QL5.	QA2., QA3., QA4., QA5.	QP4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?' QP5. 'Apart from what we have discussed, what are your other suggestions for this airport?'

Table 4.14 Descriptive Interview Results: Important Issues

Important Issues & Respondents	LCC Passengers 'As a passenger, what are important things for passengers that airport should realize?'	LCC Staff 'What are important things about carriers and passengers that airports should realize?'	Airport Executives 'What are important things about the carriers and passengers that this airport concern about?'
1. Airport safety & security	**19 respondents** Safety: 15 (P1, P2, P4, P5, P8, P9, P10, P13, P16, P17, P19, P20, P23, P26, P27) Security: 9 (P5, P8, P9, P11, P12, P16, P18, P24, P27) Safety measures: 4 (P2, P5, P16, P17) Sanitary: 2 (P5, P19) Security staff : 1 (P13)	**21 respondents** Security: 19 (L1, L2, L4, L6, L9, L10, L11, L13, L14, L16, L17, L20, L21, L24, L25, L15, L28, L29, L30) Safety: 8 (L1, L6, L8, L13, L20, L22, L23, L28) Security staff: 3 (L15, L16, L23) Safety measures: 2 (L16, L23) Safety machines: 2 (L22, L23)	**2 respondents** Security: 2 (A3, A6) Safety: 2 (A3, A6) Security staff, safety measures, safety machines: 1 (A6)
2. Airport facilities & equipment	**13 respondents** Information signs: 7 (P1, P6, P15, P19, P21, P22, P24) Toilets: 5 (P4, P5, P20, P24, P27) Seats: 3 (P1, P4, P26) Restaurants: 3 (P4, P20, P25) Parking areas: 2 (P4, P20) Wi-Fi: 2 (P22, P25) Accessibility: 2 (P19, P22) Check-in counter: 1 (P19) Information counter: 1 (P24) Terminal: 1 (P24) Electric plugs: (P26)	**23 respondents** Connecting gate: 14 (L1, L3, L5, L6, L7, L8, L11, L12, L16, L22, L23, L24, L26, L30) Parking areas: 8 (L9, L11, L12, L16, L17, L22, L24, L27) Information signs: 8 (L9, L11, L12, L15, L17, L20, L22, L27) Baggage claiming belts: 7 (L1, L3, L11, L12, L15, L23, L30) Check-in counters: 6 (L3, L4, L8, L22, L27, L30) Parking bays: 6 (L3, L4, L5, L6, L7, L8) All facilities: 6 (L9, L11, L13, L14, L16, L19) Toilets: 4 (L11, L12, L17, L22)	**6 respondents** Connecting gates: 5 (A2, A3, A4, A6, A7) Baggage claiming belts: 3 (A4, A6, A7) Check-in counters: 3 (A3, A6, A7) Parking bays: 3 (A2, A5, A6) All facilities: 3 (A2, A4, A6) Toilets: 3 (A3, A4, A5) Parking areas: 2 (A6, A7) Information signs: 2 (A5, A7) Wi-Fi: 2 (A6, A7) Lifts: 1 (A5) Health services: 1 (A6) Escalators: 1 (A3)

Table 4.14 (Continued)

Important Issues & Respondents	LCC Passengers 'As a passenger, what are important things for passengers that airport should realize?'	LCC Staff 'What are important things about carriers and passengers that airports should realize?'	Airport Executives 'What are important things about the carriers and passengers that this airport concern about?'
2. Airport facilities & Equipment (Continued)		Trolleys: 3 (L22, L24, L27) Wi-Fi: 3 (L11, L26, L27) Airline office: 2 (L4, L8) Ground transport: 2 (L16, L27) Departure hall: 2 (L22, L30) Lifts: 2 (L12, L27) Flight screen: 1 (L9) Bank, health service, arrival hall: 1 (L11) Escalators, shops, public transports: 1 (L12) Seats: 1 (L15) Restaurants: 1 (L16)	
3. Airport service	**12 respondents** Customer satisfaction: 6 (P8, P10, P15, P18, P25, P27) Equal service: 3 (P3, P13, P23) Information service: 3 (P4, P15, P21) Airport service: 2 (P19, P23) Baggage condition: 2 (P3, P7) Disable passengers: 1 (P23)	**13 respondents** Value service: 6 (L1, L2, L3, L4, L7, L8) Customer satisfaction: 5 (L3, L7, L13, L21, L27) Equal service: 4 (L3, L4, L8, L18) Disable passengers: 2 (L6, L18) Airport service: 2 (L20, L25)	**7 respondents** Customer satisfaction: 7 (A1, A2, A3, A4, A5, A6, A7) Equal service: 5 (A3, A4, A5, A6, A7) Disable passengers: 4 (A2, A5, A6, A7) Airport service: 3 (A1, A2, A5) Information service: 1 (A6)

Table 4.14 (Continued)

Important Issues & Respondents	LCC Passengers 'As a passenger, what are important things for passengers that airport should realize?'	LCC Staff 'What are important things about carriers and passengers that airports should realize?'	Airport Executives 'What are important things about the carriers and passengers that this airport concern about?'
4. Airport management	**7 respondents** Check-in system: 6 (P3, P4, P12, P14, P18, P27) Quick Process: 6 (P3, P4, P8, P10, P16, P18) Carrying capacity: 1(P1)	**15 respondents** Passenger flow: 6 (L1, L2, L4, L14, L21, L23) Check-in system: 5 (L9, L12, L15, L24, L26) Carrying capacity: 5 (L1, L2, L3, L7, L8) Resource allocation: 3 (L2, L8, L24) Good management: 1 (L2) Short turnaround time: 1 (L6)	**7 respondents** Carrying capacity: 6 (A1, A2, A3, A4, A5, A6) Check-in system: 4 (A2, A4, A6, A7) Airport meetings: 4 (A3, A5, A6, A7) Slot allocation: 3 (A3, A4, A6) Resource allocation: 1 (A3) Technology: 1 (A7) Flight procedures: 1 (A6)
5. Airport staff	**8 respondents** Airport staff: 6 (P4, P6, P14, P19, P23, P27) English specking staff: 4 (P6, P15, P19, P22)	**5 respondents** Airport staff: 5 (L12, L14, L21, L22, L24)	**4 respondents** Airport staff: 2 (A3, A5) Executives: 2 (A6, A7)
6. Airport infrastructure & environment	**5 respondents** Cleanliness: 5 (P6, P16, P18, P19, P27) Terminal design: 1 (P27)	**4 respondents** Terminal design: 3 (L4, L7, L8) Spaces: 1 (L14)	**7 respondents** Spaces: 4 (A1, A5, A6, A7) Cleanliness: 4 (A3, A4, A5, A7) Terminal design: 3 (A1, A2, A5) Runways: 2 (A6, A7) Taxiways: 2 (A6, A7)

(2) Airport facilities & equipment

Passengers, low-cost carrier staff, and airport executives viewed that all airport facilities and equipment were important for passengers and airlines. 23 of 30 LCC staff mentioned on airport facilities as important issues. Among facilities, connecting gates, parking areas, toilets information signs, baggage claiming belts, and check-in counters were identified as critical issues. Two groups of airport customers including airline staff and passengers thought that toilets were basic needs and important facilities for airport users. Airport executives and low-cost carrier staff did agree that connecting gates check-in counters, and parking areas are important facilities. Moreover, passengers viewed that enough seats should be allocated over all terminal areas and ground transportation (accessibility) should be provided for airport users.

(3) Airport service

Three groups of respondents raised customer satisfaction and equal services as significant issues. Airports should pay attention or care on passengers' satisfaction and provide convenient services to all passengers. Equal service is also mentioned in this issue since low-cost carrier passengers and low-cost carrier staff prefers to perceive convenient services as those of full-service carriers such as numbers and position of check-in counters. In addition, information service was another important attributes for low-cost carrier passengers. Correct and clear information on directions or flights will facilitate both passengers and airlines.

(4) Airport management

Both low-cost carrier staff and passengers preferred quick and easy processes for passengers' travels. Good flow of passengers was desired so congestion or passenger flow should be well managed. It was believed that airport management should be able to deal with a growing number of passengers and airport users. Once there were grouped passengers, it's necessary for an airport to well manage on groups by not effecting to ordinary passengers. Not only low-cost carrier staff but also airport executives considered resource (e.g., bay, slot) allocation as another important issue for all airlines.

(5) Airport staff

Staff of airports should be well trained on customer service and capabilities. Nice and friendly staff was desired among passengers and low-cost carrier staff. Moreover, staff should be good at communication of both local and foreign languages. Airport staff should be available or ready to serve the customers. Seriously, airport staff working on safety & security was concerned. Security staff must be qualified and follow the security procedures. In addition, capabilities of management executives and their vision were essential for airport management.

(6) Airport infrastructure & environment

Passengers and airport executives looked at cleanliness as an important attribute of airports. Airport terminal should be in a clean, neat, and tidy environment. More importantly, both airport executives and low-cost carrier staff considered airports to be able to handle a growing number of airport users affected from the growth of low-cost carriers.

2) Question 3: Efficient operation

The passengers, low-cost carrier staff, and airport executives perceived some efficient performance of the airports. Similarly, efficient issues were described in these seven groups as follows (Table 4.15).

(1) Airport safety & security

Low-cost carrier staff and passengers perceived that airports had performed quite well on security checks and security processes. All airport users had to be passed the security checked point before getting to the airports. Another efficient point on security is about a cooperation with security agencies (e.g., air force, army).

(2) Airport facilities & equipment

The passengers, low-cost carrier staff, and airport executives believed that airports had provided basic facilities needed for airport customers and most of those facilities in general were efficient. It’s because the airports provide wide ranges of services and facilities for airport users. Some LCC staff was satisfied with check-in counters.

Table 4.15 Descriptive Interview Results: Efficient Performance

Efficient Issues & Respondents	LCC Passengers 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'	LCC Staff 'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?'	Airport Executives 'Could you please tell me anything that this airport could efficiently perform?'
1. Airport safety & security	**12 respondents** Security screening: 10 (P4, P9, P10, P12, P14, P17, P19, P21, P25, P26) Safety & Security concerns: 4 (P11, P13, P14, P21) Security cooperation: 2 (P9, P12) Security staff: 1 (P11)	**11 respondents** Safety & Security concerns: 10 (L6, L10, L18, L19, L20, L21, L23, L24, L29, L30) Security cooperation: 3 (L5, L6, L20) Security equipment: 1 (L6) Security screening: 1 (L19)	**3 respondents** Safety & Security concerns: 3 (A3, A4, A5) Security cooperation: 1 (A5)
2. Airport facilities & equipment	**11 respondents** Ranges of services: 3 (P6, P12, P27) Accessibility: 2 (P18, P19) Retails: 2 (P3, P24) Food shops: 2 (P3, P22) Connecting gate: 2 (P3, P17) Clean toilets: 1 (P7) Equipment: 1 (P18) Taxi services: 1 (P17) Bank: 1 (P3) Information signs: 1 (P9) Facilities for disables: 1 (P23) Trolley: 1 (P20) Seats: 1 (P20)	**10 respondents** Ranges of services: 5 (L5, L13, L15, L19, L25) Accessibility: 2 (L5, L24) Check-in counters: 2 (L5, L24) Meeting room: 1 (L4) Wi-Fi settlement: 1 (L6) Clean toilets: 1 (L8) Post office: 1 (L23) Ancillary services: 1 (L26) Prayer rooms:1 (L28)	**4 respondents** Equipment: 2 (A2, A4) Health service: 1 (A1) Parking Bay: 1 (A4) Taxi services: 1 (A3)

Table 4.15 (Continued)

Efficient Issues & Respondents	LCC Passengers 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'	LCC Staff 'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?'	Airport Executives 'Could you please tell me anything that this airport could efficiently perform?'
3. Airport infrastructure & environment	**19 respondents** Compact size: 18 (P5, P7, P8, P10, P11, P12, P13, P14, P15, P16, P17, P19, P20, P21, P22, P24, P25, P27) Terminal design: 1 (P4) Cleanliness: 1 (P25)	**1 respondent** Terminal decoration: 1 (L29)	-
4. Airport management	**7 respondents** Quick process: 5 (P14, P15, P18, P19, P25) Check-in systems: 4 (P5, P10, P18, P25)	**3 respondents** Airport meetings: 2 (L7, L8) Check-in systems: 1 (L30)	**5 respondents** Airport meetings: 4 (A3, A5, A6, A7) Good system: 1 (A2)
5. Airport staff	**7 respondents** Helpful staff: 7 (P5, P6, P7, P8, P12, P22, P23)	**2 respondents** Helpful staff: 2 (L3, L7)	**3 respondents** Helpful staff: 3 (A3, A5, A6)
6. Airport service	**7 respondents** Convenient: 6 (P9, P13, P17, P20, P24, P27) Flight frequencies: 1 (P2)	- -	**7 respondents** Airport services: 6 (A1, A2, A3, A4, A6, A7) Information services: 4 (A3, A4, A5, A6) Equal services: 2 (A5, A6)
7. Acceptable services	**1 respondent** Nothing efficient: 1 (P1)	**12 respondents** Just acceptable: 12 (L1, L2, L9, L11, L12, L14, L15, L16, L17, L21, L25, L27) Nothing efficient: 5 (L1, L2, L11, L17, L27)	- -

(3) Airport infrastructure & environment

Low-cost carrier passengers liked the compact size of airports. Small sized airports generated easy functions within terminals. It was easy to find places, shops, and service points. Exactly, this kind of airport structure helped passengers safe the time at airports.

(4) Airport management

Some LCC passengers satisfied with the fast process of passengers at the airports. This issue related to the small size of the airports as well. Moreover, both LCC staff and airport executives did agree that airport meetings where all parties were invited were efficient.

(5) Airport staff

Some of low-cost carrier staff and passengers get impressed service from friendly and helpful airport staff. In addition, airport executives themselves believed airport staff was really helpful for service's tasks.

(6) Airport service

Some LCC passengers touched convenient service during the time at airports. Airport executives judged the airports efficiently performed in customer services. Airport staff paid attention and care to all airport users with good services.

(7) Acceptable services

Surprisingly, 12 of 30 LCC staff and 1 passenger perceived airports can perform minimum standard without distinctive issues. They thought what the airports provide was just acceptable.

3) Question 4: Improvement areas

A number of issues on improvement areas were hugely raised as well as the important issues. Diverse issues were then grouped into six categories as follows (Table 4.16).

Table 4.16 Descriptive Interview Results: Improvement Areas

Improvement Areas & Respondents	LCC Passengers 'As a passenger, could you please raise areas or issues that the airport needs to improve?'	LCC Staff 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'	Airport Executives 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'
1. Airport facilities & equipment	**19 respondents** Restaurants / Choices of food: 9 (P2, P3, P7, P9, P12, P19, P20, P24, P26) Seats: 8 (P4, P5, P6, P8, P16, P23, P26, P27) Toilets: 6 (P5, P10, P15, P18, P23, P26) Public transport: 6 (P2, P18, P19, P20, P21, P27) Check-in counters: 5 (P1, P2, P4, P13, P26) Wi-Fi/Internet: 5 (P6, P13, P18, P19, P22) Connecting gates: 2 (P8, P23) Parking areas: 4 (P2, P10, P13, P18) Signs: 3 (P5, P7, P27) Feed belts: 1 (P3) Information: 1 (P9)	**25 respondents** Wi-Fi/Internet: 18 (L1, L4, L10, L11, L13, L14, L15, L16, L17, L18, L19, L21, L22, L24, L25, L26, L27, L29) Toilets: 15 (L3, L5, L7, L11, L12, L13, L14, L15, L20, L21, L22, L24, L27, L28, L29) Parking areas: 14 (L1, L2, L8, L9, L10, L13, L14, L15, L17, L19, L22, L23, L29, L30) Connecting gates: 13 (L1, L2, L3, L5, L7, L8, L11, L12, L14, L15, L26, L27, L30) Seats: 11 (L2, L3, L5, L13, L14, L15, L19, L20, L22, L23, L30) Baggage claiming belts: 10 (L9, L10, L12, L13, L15, L23, L24, L25, L28, L29) Restaurants / Choices of food: 8 (L8, L9, L13, L16, L17, L24, L26, L27) Signs: 7 (L14, L17, L19, L20, L23, L24, L30) Check-in counters: 7 (L3, L4, L7, L8, L12, L25, L26) Lifts/Elevators: 6 (L4, L7, L12, L13, L16, L17) Feed belts: 5 (L3, L8, L9, L10, L25) Facilities for disables: 4 (L4, L6, L16, L18) Choices of shops: 3 (L8, L9, L26)	**7 respondents** Toilets: 3 (A4, A5, A6) Check-in counters: 3 (A2, A4, A6) Connecting gates: 3 (A3, A6, A7) Baggage claiming belts: 2 (A6, A7) Corridor (dep. & arr) : 1 (A5) Parking areas: 1 (A1) Seats: 1 (A1) Feed belts: 1 (A6) Lifts/Elevators: 1 (A2) Facilities for disables: 1 (A2) public transport: 1 (A6)

Table 4.16 (Continued)

Improvement Areas & Respondents	LCC Passengers 'As a passenger, could you please raise areas or issues that the airport needs to improve?'	LCC Staff 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'	Airport Executives 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'
1. Airport facilities & equipment		Corridor (dep. & arr): 3 (L2, L5, L14) Public transport: 3 (L1, L28, L30) Airline offices: 2 (L5, L12) Banks: 2 (L9, L18) Left luggage: 2 (L20, L22) Escalators: 1 (L13) Halal food: 1 (L18) Health care: 1 (L21) Information: 1 (L21) Public phones: 1 (L21) Remote bays desire: 1 (L1) Trolleys: 1 (L29) TV' sounds: 1 (L7)	
2. Airport service	**13 respondents** High price food + Value services: 11 (P1, P2, P3, P7, P8, P10, P11, P12, P13, P20, P24) Equal services: 2 (P6, P16)	**13 respondents** Equal services: 12 (L1, L3, L4, L7, L9, L10, L11, L12, L15, L18, L19, L30) Value services: 3 (L4, L11, L22)	**2 respondents** Specific service: 2 (A1, A6)

Table 4.16 (Continued)

Improvement Areas & Respondents	LCC Passengers 'As a passenger, could you please raise areas or issues that the airport needs to improve?'	LCC Staff 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'	Airport Executives 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'
3. Airport management	**9 respondents** Group passengers: 3 (P8, P10, P13) Carrying capacity: 2 (P17, P18) Tour representatives: 2 (P5, P6) Curbside management: 2 (P1, P2) Check-in system: 1 (P8)	**11 respondents** Carrying capacity: 9 (L7, L8, L10, L13, L14, L16, L22, L23, L29) Price & Fee charges: 3 (L8, L16, L17) Flight timetable / slot allocation: 1 (L1) Complicated process: 1 (L7)	**7 respondents** Check-in system: 4 (A2, A4, A6, A7) Carrying capacity: 2 (A3, A5) Tour representatives: 1 (A1)
4. Airport safety & security	**7 respondents** Security staff: 4 (P2, P10, P13, P25) Security restrictions: 4 (P1, P10, P17, P25) Security check points: 1 (P18)	**10 respondents** Security staff: 6 (L2, L6, L12, L13, L25, L26) Security restrictions: 6 (L2, L3, L6, L9, L25, L27) Security check points: 1 (L7)	**1 respondent** Security restrictions: 1 (A3)
5. Airport staff	**2 respondents** Staff competency: 2 (P19, P27)	**9 respondents** Staff competency: 7 (L7, L9, L12, L13, L14, L23, L30) Friendly staff: 2 (L26, L30) Training of safety & security: 1 (L6)	**2 respondents** Staff competency: 1 (A5) Outsourcing staff: 1 (A2)
6. Airport infrastructure & environment	**5 respondents** Terminal design: 4 (P14, P23, P26, P27) Airport location: 1 (P2)	**4 respondents** Terminal design: 3 (L7, L8, L27) 1-floor terminal: 1 (L1)	**4 respondents** Building space: 4 (A1, A5, A6, A7) Terminal design: 1 (A1)

(1) Airport facilities & equipment

The staff and passengers of low-cost carriers needed check-in counters and parking areas to be improved even in terms of numbers or location. Numbers of seats allocated in all airport areas and Wi-Fi services should be considered. Low-cost carrier staff and airport executives desired connecting gates, baggage claiming belts and facilities for handicapped to be improved. The LCC staff also suggested airports to improve information signs shown inside the airports. In addition, low-cost carrier passengers were not well facilitated on ground transport from and to airports whereas low-cost carrier staff viewed parking lots were not sufficient for their passengers. All three groups agreed that number and condition of toilets must be concerned.

(2) Airport service

Both groups of airport customers wanted airport services to be equal for all groups of customers. Three schemes of equal services were revealed. First, normal passengers and handicapped must have equal right to get services from airports. Secondly, all passengers who equally paid for airport tax must gain the same services from airports. The last scheme was about equality among airlines. Both full-service carriers and low-cost carriers must be equally treated by airports. Moreover, the price of food and goods must be reasonable and valuable for customers to afford.

(3) Airport management

The staff and passengers of low-cost carriers were not impressed with the condition of airport congestion so airports should be able to manage a huge number of people using airports (carrying capacity) or else it will affect customers' processes and satisfaction. Airport executives desired to improve check-in systems from the existing manual system to become the automatically check-in system so called 'CUTE' system. Such an automatic check-in, it will ease airport administrators to better manage and utilize check-in counters. More, airport executives perceived bay allocation was not well managed for airlines.

(4) Airport safety & security

Both low-cost carrier passengers and staff thought that Thailand airports should improve on security screening and safety measures. Screening on individuals and their belongings must be more focused and stricter.

(5) Airport staff

In terms of airport staff, staff working on security and other airport service staff should be concerned. Security staff of the airport must be qualified and well trained in order to cope with many types of circumstances. Also, some capabilities such as communication skills, positive thinking, being helpful, or multi-languages of airport staff might need improvement.

(6) Airport infrastructure & environment

Three groups of respondents perceived the terminal building was been built for years so some service points were not well located in proper positions. Improper functions of the building affected the good flow of passengers.

4) Question 5: Other suggestions on airports

Above the questions on important issues, efficient areas, and improvement needs, some respondents had raised some more issues. Suggested issues were both similar and different from previous responses. However, suggestions were described in these following six topics (Table 4.17).

(1) Airport facilities & equipment

Airport customers needed airport facilities (e.g. Wi-Fi, connecting gates, and seats) must be well organized and always perform in a good condition. Wi-Fi services were also popular among suggestions on airport facilities. Furthermore, some still mentioned on ground transportation, scale services, drinking water station, or electric plugs. However, low-cost carrier staff gave compliment on airport meetings where related parties were invited.

(2) Airport service

Equal services among airlines and passengers and the worthiness of received services as paid tax were seen as critical issues that airport should sincerely concern. Airport customers did care of reasonable services. Low-cost carrier staff also mentioned on high airport parking fees.

Table 4.17 Descriptive Interview Results: Other Suggestions on Airports

Suggested Issues & Respondents	LCC Passengers 'Apart from what we have discussed, what are your other suggestions for this airport?'	LCC Staff 'Apart from what we have discussed, what are your other suggestions for this airport?'	Airport Executives 'Apart from what we have discussed, what are your other ideas on airport operation?'
1. Airport facilities & equipment	**12 respondents** Free Wi-Fi: 5 (P2, P5, P8, P9, P26) Connecting gate: 2 (P10, P13) Public transport: 2 (P18, P24) Facilities for all: 1 (P1) Drinking water station: 1 (P6) Seats: 1 (P8) Scale services: 1 (P20)	**10 respondents** Free Wi-Fi: 8 (L1, L10, L13, L22, L24, L25, L26, L29) Seats: 1 (L13) Connecting gate: 1 (L5) Public transport: 1 (L1) Parking: 1 (L1) Cheap food stores: 1 (L27)	- -
2. Airport service	**4 respondents** Equal service: 3 (P1, P10, P13) Clear information: 1 (P17)	**10 respondents** Equal service: 5 (L4, L12, L16, L18, L19) Airport tax & charges: 4 (L1, L3, L11, L12) Clear information: 1 (L21) Disables services: 1 (L6)	- -
3. Airport management	**1 respondent** Maintenance area & time: 1 (P6)	**6 respondents** Carrying capacity: 3 (L7, L8, L14) Cleanliness: 2 (L13, L15) Illegal taxi / Tour Representative: 1 (L2)	**2 respondents** Illegal taxi / Tour Representative: 1 (A1) Quality control on staff: 1 (A2)

Table 4.17 (Continued)

Suggested Issues & Respondents	LCC Passengers 'Apart from what we have discussed, what are your other suggestions for this airport?'	LCC Staff 'Apart from what we have discussed, what are your other suggestions for this airport?'	Airport Executives 'Apart from what we have discussed, what are your other ideas on airport operation?'
4. Airport infrastructure & environment	**4 respondents** Airport condition: 4 (P12, P14, P19, P27)	**1 respondent** Airport condition: 1 (L27)	**-** -
5. Airport safety & security	**1 respondent** Security staff: 1 (P19)	**2 respondents** Security restriction: 2 (L2, L3)	**-** -
6. Airport staff	**1 respondent** Friendly & Helpful staff: 1 (P3)	**-** -	**1 respondent** Executives 'vision: 1 (A7)

(3) Airport management

Some of LCC staff still mentioned the ability of airport management in dealing with growing numbers of airport customers. Some of LCC staff and of airport executives concerned on how to well manage illegal taxi services and the tour representatives. Some airport executives concerned on the quality of outsourced staff. Some tasks of Thailand airports such security or cleaning hired contractors of which the staff was recruited by the contracted companies.

(4) Airport infrastructure & environment

Airport executives themselves thought that airport terminal had limitation on existing construction and design. Also, some passengers and one LCC staff suggested airports to be renovated in order to generate better functioned terminal.

(5) Airport safety & security

Some low-cost carrier staff suggested airports to be stricter on security screening. All persons who get in the airports must be screened and checked without any exception.

(6) Airport staff

There was just one LCC passenger raised 'the friendliness of airport staff' as a suggestion on airport staff. At the same time, one airport executive believed that the capability and vision of airport executives will shape the direction of airport operation.

4.2 Operational Efficiencies of Thailand Airport from the View of Low-Cost Carriers (Research Objective 1)

To study the operational efficiencies of Thailand airport from the view of low-cost carriers, three main interview questions were used to draw answers related to four research questions. Results from each interview question did not describe just the specific research question but can explain some other relevant issues on other research questions. Thus interview results were mutual analyzed for answering three research questions. The three research questions (RQ) were associated to important areas,

efficient areas, and improvement needed areas (section 4.2.1 - 4.2.3). In addition, a summary of operational efficiencies of Thailand airport was concluded in section 4.2.4.

Both thirty low-cost carrier staff (L) and seven airport executives (A) were involved in achieving research results on operational efficiencies of Thailand airport. The views of airport customers—low-cost carrier staff—were an essence of this research objectives whereas airport executives' perspectives were mutual analyzed to reflect another view of service provider. Both similar and different results from two different responded groups were also found in this research (Appendix C).

4.2.1 What Operational Areas are Important to Low-Cost Carriers? (RQ1)

In order to establish operational efficiency of Thailand Airports, there was a need to understand operational areas that are critical to low-cost carriers. The researcher asked low-cost carrier staff the things that they consider important for in an airport that targeted low-cost carriers. Several themes came up during the interviews. The results from airline staff showed that important areas covered airport safety & security, airport facilities, airport staff, airport management, airport service, and airport infrastructure & condition. At the same time, interview results from airport executives revealed three important themes that executive had concerned (airport service, airport facilities, and airport infrastructure & condition) (Table 4.18). The most frequently occurring theme was safety and security. More than a half of the 30 interviews felt that provision of safety and security was the most important aspect for airports. The results were also similar at four airports. Most of respondents raised safety and security as the primary issue over the others whereas some respondents raised purely the security issue to be significant as these following examples.

"The most important thing is the safety and security.
All passengers and airport users should be strictly screened at front gate so that it will assure passengers and our staff." (L1)

Table 4.18 Important Operational Areas for the Low-Cost Carriers

LCC Staff's Perspectives	Airport Executives' Perspectives
1. Airport safety & security – Equipment – Procedures – Measures	1. Airport service – Customer satisfaction – Equal services
2. Airport facilities – Parking spaces – Connecting gates – Check-in counters – Signs – Baggage claiming belts – Toilets – Airline offices – Banks – Escalators – Lifts – Health services	2. Airport facilities – Connecting gates – Parking lots – Toilets – Seats – Lifts – Bays
3. Airport staff – Operational staff – Security staff	3. Airport infrastructure & condition – Carrying capacity – Cleanliness
4. Airport management – Executive capabilities – Congestion management – Slot allocation	-
5. Airport service – Customer services – Equal services – Information services	-
6. Airport infrastructure & condition – Carrying capacity – Airport space	-

"Safety and security measures are the most significant point at airports." (L28)

"Security is the most significant point.
Passengers and staff should be safe in terms of life and assets." (L29)

The interviewees also pointed the need for equipment, procedures and measure that promote the safety and security of passengers. This response was largely influenced by the growing threat of terrorism especially at Hat Yai International Airport where located in Songkhla Province.

"We are still afraid of terrorism. Once the passengers step on the airport's floor, airport staff must be strict." (L6)

Since airports were considered among prime targets for terrorists hence the need to enhance security in these facilities (de Neufville, 2008).

Another frequently occurring theme was about airport facilities. Some respondents gave mutual importance to all airport facilities.

"If we think of passenger processes, parking, signs, airport staff, lifts, escalators, check-in system, shops, connecting gates are important for departure. On arrival, connecting gates, claim belts, even toilets and public transports are important as well." (L12)

"All facilities and services at an airport are necessary for passengers and airlines. An airport should make everything to be in a good condition." (L14)

More than one third of the 30 interviewees felt that all airports that target low-cost airline passengers should have enough parking spaces. Since airports receive a large number of visitors, the airports need ample parking space to cater for all its visitors, consequently. Another noteworthy theme that came out during the interview was number of connecting gates. The interviewees felt that since low-cost airports depend on the frequency of flights to reduce costs; they needed a large number of connecting gates so as to reduce the turnaround time.

Another operational area that was deemed important by the low-cost carrier staff was the check-in counters. The interviewees felt that low-cost airports need sufficient numbers of check-in counters, as well as, check-in systems that facilitate quick processing of passengers documents. The location of the check-in counter was also deemed as an important factor.

Signs were also considered as essential elements in airports that target low-cost passengers. Low cost passengers needed convenient and fast services. Information signs and screens aid the movement of passengers within airports by providing them with clear directions. Other important facilities included number of baggage claiming belts and toilets.

Airport staff was another critical part of airport operation. Some of low-cost carrier staff mentioned to both friendly airport staff and security staff as important persons. Besides airports' operational staff, the airport management's capabilities were important. Passenger flow or congestion was desired to be well managed in order to facilitate and ease passenger procedures. Low-cost carrier staff trusted that good check-in system will do help on congestion. In addition, slot allocation was meaningful. Managing on flight time table, bay assignments, or allocating approached bays were mutual significant.

In terms of airport services, however, the staff of the low-cost carriers pointed out that customer service altogether with equal treats was essential. Handicapped passengers should have equal right to use airport service in the similar ways to those normal passengers. Likely, low-cost carriers should get the comparable services as get of the full-service carriers. Some of staff respondents placed importance on the carrying capacity of the airports. That was an airport should have enough space to accommodate both airlines and passengers. Other factors were mentioned sparingly including airline offices, trolleys, banks, escalators, lifts, and availability of health services.

In a relation to the above results, samples of airline staff's interview results on important issues were also illustrated with the six important themes: airport safety & security, airport facilities, airport staff, airport management, airport service, and airport infrastructure & condition (Table 4.19).

The researcher asked the same question to airport executives, and several themes came up. The most prominent theme was customer satisfaction. The airport executive felt that low-cost passengers need services that meet and exceed their needs. Exactly, equal services were desired by individuals. The airport executive also felt that airport passengers look for superior customer service. They need staff and system that are friendly and that enhance customer convenience.

Table 4.19 Sample Dialogues of Low-Cost Carrier Staff in a Relation to Important Areas of Airport Operations

Important Areas from LCC Staff's Perspectives	Sample Dialogues
1. Airport safety & security – Equipment – Procedures – Measures	**L1:** All passengers and airport users should be strictly screened at front gate so that it will assure passengers and our staff. **L6:** Safety & Security is important for airlines, passengers, and everyone who works at the airport. **L10:** Security is the most important point for everyone. Airport staff, airline staff, passengers, and shop owners also require security in life, especially at the airport. **L23:** Safety is the most important issue for airport users. **L28:** Safety and security measures are the most significant point at airports. **L29:** Security is the most significant point. Passengers and staff should be safe in terms of life and assets.
2. Airport facilities – Parking spaces – Connecting gates – Check-in counters – Signs – Baggage claiming belts – Toilets – Airline offices – Banks – Escalators – Lifts – Health services	**L2:** Besides the airsides, check-in counter allocation is very important for airline and passengers to precede the departure procedures. **L3:** If our flight is assigned to park at the remote bay, we have to prepare buses or passenger steps. We want our passengers to be convenient as much as possible. Within the terminal, the important things are check-in counters and baggage belts on arrival. Enough counters and belts will facilitate the passengers. **L4:** Remote parking bay is safer but it's complicated to deal. We concern on rains, sunshine, and security. **L5:** The most important thing is an aircraft bay. Even numbers of parking bay seem to be enough but not all are in a good location. **L6:** Bay for aircraft parking is important as well. If the airport provides us with the remote bay, the difficulties come. Our turnaround time is limited with 15 minutes for arrival and 15 minutes for departure. Using connecting gates is better. **L7:** There are only 2 bridges from all 5 bridges. It's not convenient for our passengers. Once we have to use the remote bay, the cost will be increased. **L8:** The important thing for us is about airline office, bay, check-in counters. **L10:** Parking space, airport signs and screen, security checking, check-in, and facilities. **L11:** Many things are important for airlines and passengers such as parking, signs, security, belts, aerobridges, toilets, banks, health services, internet, or arrival hall. **L12:** If we think of passenger processes, parking, signs, airport staff, lifts, escalators, check-in system, shops, connecting gates are important for departure. On arrival, connecting gates, claim belts, even toilets and public transports are important as well.

Table 4.19 (Continued)

Important Areas from LCC Staff's Perspectives	Sample Dialogues
3. Airport staff – Administrative staff – Security staff	**L21:** Airport should pay attention to every detail on customer services. Easy processes with nice and friendly staff. **L23:** Safety machines and equipment, and staff are mutual significant. **L24:** Main airport services are important. That is airport staff,…
4. Airport management – Executive capabilities – Congestion management – Slot allocation	**L1:** Managing carrying capacity is very important since a number of passengers have been increased every year. Good flow of passengers is important. To deal with the passengers' flows, the airport should concern on enough boarding gates and baggage belts on arrival. **L2:** Airports should be able to allocate proper slot for all airlines. **L3:** Numbers of bay should be fit with number of daily flights at the airport.
5. Airport service – Customer services – Equal services – Information services	**L3:** We want our passengers to be convenient as much as possible. Especially when it rains or hot, it's not fair for our passengers who pay the same rate of airport tax with the others. **L4:** Airport should be fair and sincere on managing parking bay. **L8:** Connecting gate is important as well. Airport must be ready to serve all airlines. **L13:** …and everything related to customer services to highly satisfy its customers. **L18:** Equality is important for airlines and passengers. Passengers with wheel chairs should have equal opportunity to get the service from airports and airlines. **L20:** Information is the most important thing for passengers and airlines. Passengers need clear and full information to process their flight
6. Airport infrastructure & condition – Carrying capacity – Airport space	**L3:** Numbers of bay should be fit with number of daily flights at the airport. **L7:** This airport might not be planned to support this kind of aviation growth. The space of the airport is still the same whereas numbers of flights and passengers are increased. **L8:** Sometimes, there are high volume of flights, airport need to well manage with capacity and facilities.

"Service and satisfaction are important. We want to serve all customers with the quality and want them to be satisfied with our service." (A1)
"All airport services and facilities are important. We must satisfy all customers; airlines, passengers, or airport users" (A2)
"We pay attention to all customers fairly. We serve the best service." (A5)
"Passengers should be comfortable using the airport services." (A6)

Another prominent theme was airport facilities. The executive felts that low-cost airlines' passengers need airports that have adequate facilities. Some of the facilities that were commonly mentioned include connecting gates; parking lots, toilets, seats, lifts and bays.

"Good counters, toilets, pathway, connecting gates and anything are important. We also pay attention to facilities for handicapped." (A6)
"For airlines, as our customers and our partners who have to serve passengers like us, we must consider all services and facilities that airlines need." (A7)

Carrying capacity was also a prominent theme during the interview with the senior executive team. The interviewees felt that airports that target low-cost airlines needed to have sufficient capacity to handle the large volume of passengers. This included the availability of space and facilities to manage large numbers of visitors. In addition, airport terminal should be neat, tidy, and clean which reflected the good condition.

"Airport carrying capacity is important. Our existing building and its structure were not planned to subtend a large number of passengers like today." (A2)
"Capacity is very important for airport. We are in the service industry; we prefer to satisfy all users." (A3)

To conclude section 4.2.1 where importance areas were identified, low-cost carrier staff gave airport safety & security, airport facilities & equipment, airport staff, airport management, airport services, and airport infrastructure & condition as mutual

precedence. Among these important themes, safety & security and airport facilities were most frequently raised. Similarly to the views of airport executives, airport services, facilities, and infrastructure were important for their customers. However, safety & security were not mentioned by airport executives as an important factor.

4.2.2 What Operational Areas Could Thailand Airports Efficiently Perform? (RQ2)

To further explore the operation efficiency of Thailand Airports from low-cost carriers' perspective, the researcher investigated areas in which Thailand Airports have excelled. The researcher interviewed low-cost carrier staff in order to understand their perceptions concerning the performance of Thailand Airports. When asked which areas have Thailand Airport excelled, several themes came up. Surprisingly, more than a few interviews said that they see nothing special in Thailand airports as some statements shown below.

"Um…no." (L1)
"I don't think there is." (L2)
"Everything is normal, nothing is special. It's just acceptable." (L12)
"Everything is acceptable with nothing outstanding." (L16)
"Nothing." (L17)
"I think it's nothing." (L27)

However, some themes such as safety & security, facilities, management, or airport staff were seemed to be efficient (Table 4.20). Among the answered respondents, the most prominent theme was safety and security. A substantial portion of the interview felt that the airports have excelled in terms of providing safety and security to passengers. A good numbers of the interviews were happy with the fact that Thailand Airports have forged effective partnerships with various entities including security agencies, emergency service providers, fire departments so as to provide safety and security. A good number of the interviewees were happy with the security systems and procedures that are installed in the airports.

Table 4.20 Efficient Operational Areas for the Low-Cost Carriers

LCC Staff's Perspectives	Airport Executives' Perspectives
1. Airport safety & security – Measures – Equipment – Agencies cooperation	1. Airport service – Customer services – Equal treat
2. Airport facilities – Ranges of services – Check-in counters	2. Airport staff – Helpful staff
3. Airport management – Airport meetings – Flexible management	3. Airport facilities – Bay allocation – Check-in counters – Connecting gates – Health care – Information signs
4. Airport staff – Friendly staff	4. Airport safety & security – Agencies cooperation

"The good point is the security.
There are many organizations to cooperate in security functions." (L5)
"This airport tries to maintain the security measures.
There were not much serious incidents happened in this airport." (L10)
"Safety measures here are quite strict." (L18)

Another theme that was prominent during the interview was the airport facilities. Thailand airports were perceived to have wide ranges of services. Both basic facilities and ancillary services were provided at airports. Check-in counter was identified as one of the important operations area for low-cost Thailand airports. The interviewees at some airports felt that airports have performed well in terms of providing an adequate number of check-in counters. Thus, some were also happy with the location of the check-in counters and the check-in system utilized by the airports.

"This airport has ranges of services including bank service, taxi, and association.
More importantly, check-in counters are adequate for all airlines." (L5)
"This airport provides variety of services such as shops, banks, post office,

rental services and so on." (L13)

"It's ok that the airport has a variety of services such as banks, post office, prayer room, rental facilities." (L15)

"The check-in location and condition seems to be ok." (L22)

"Check-in counters and condition are quite good." (L24)

"We are ok with the check-in system, it's easy." (L30)

A number of airline staff positively thought that airport meetings in which airlines' representatives were participated were beneficial. Not only the airlines but other related parties such as tenants, concessionaires, or outsourced companies were invited. In order to provide good service to customers, voices of airports' users were advantages for airports' operation. Availability of effective customer services was also a prominent theme. Also, some interviewees felt that the airports had friendly employees, who provide efficient services. One of the interviews was glad that the airport employees understood the airlines' procedures and render help to the airlines staff from time to time.

"Some of airport staff is very helpful. They understand our procedures. Sometimes they offer helps to us." (L3)

"And another good thing is that the AOT arranges the meeting for every three months. There are related entrepreneurs appointed in the meeting." (L7)

Themes that appeared sparingly include airport flexibility, airport location; cleanliness, congestion management, shops and terminal decorations. The overview of themes and related dialogues retrieved from low-cost carrier staff was illustrated in Table 4.21.

The researcher also asked seven airport executives concerning areas that they feel Thailand airports have excellent. However, the most prominent themes that emerged in this interview were customer service and helpful staff. This is contrary to the aircraft carrier staff interview where security was the most prominent theme. Generally, the airport executives were happy with the quality of customer care services that were provided in the airports. The executives cited Thailand airports

Table 4.21 Sample Dialogues of Low-Cost Carrier Staff in a Relation to Efficient Areas of Airport Operations

Important Areas from LCC Staff's Perspectives	Sample Dialogues
1. Airport safety & security – Measures – Equipment – Agencies cooperation	**L5:** The good point is the security. There are many organizations to cooperate in security functions. **L6:** The airport has a good concern on security measures. The entrance gate and exit are fixed. Security equipment is modern enough. More, there is staff from both airport and air force dealing with the security. **L10:** This airport tries to maintain the security measures. There were not much serious incidents happened in this airport. **L 20:** This airport is quite strict on safety measures since this airport is on the risk area in the southern. Moreover, it's good that there is good cooperation with military force. **L23:** I believe that this airport has tried best on safety and security concerns. **L24:** Airport executives care on safety and security.
2. Airport facilities – Ranges of services – Check-in counters	**L5:** This airport has ranges of services including bank service, taxi, and association. **L9:** I think this airport can provide standard services and facilities with nothing special. All are acceptable. **L13:** This airport provides variety of services such as shops, banks, post office, rental services and so on. **L15:** It's ok that the airport has a variety of services such as banks, post office, prayer room, rental facilities. **L23:** Another service that eases our work is the post office. We don't need to go outside for sending parcels or mails.
3. Airport management – Airport meetings – Flexible management	**L4:** Sometimes, airport allows us to use the airport's meeting room. Since we have a lot of airline staff and we don't have enough space to do a monthly meeting, we ask the airport to use the meeting room for free. If the room is available, we can occupy it. **L7:** It's not really difficult if we need to operate more flights at the airport, they do understand. And another good thing is that the AOT arranges the meeting for every three months. There are related entrepreneurs appointed in the meeting. **L8:** Normally, we have a chance to join the meeting with airport executives every 3 months.
4. Airport staff – Friendly staff	**L3:** Some of airport staff is very helpful. They understand our procedures. Sometimes they offer helps to us.

offer numerous informational employees who are well training in different areas including foreign languages.

"We have tried our best to deliver good service to our customers. We have managed our limited space to serve everyone." (A1)

"We pay high attention to take care our passengers. We do concern on staff's proper manners and services. For first comers, we outsource staff to specifically take care of them at the arrival hall." (A3)

"We have paid attention to all services. We care on all information signs. Information signs must be clear and shown with multi-language.
We do have three airport help staff per shift: one in domestic arrival, one in international arrival, and one in the terminal/hall." (A5)
"We have provided all services and facilities as much as we can." (A7)

Another area that the executives felts that Thailand Airports have excelled is in the provision of suitable airline facilities. The executive cited that many Thailand airports have invested in facilities that are designed to cater to the needs of low-cost carriers and their passengers. These facilities include bay areas, check-in counters, parking space and connecting gates. The executive also felt that the Airports are efficient in terms of providing safety and security. The executive also pointed out the high level of cooperation between the Airports, security and other agencies as a major area of strength where security is concerned.

"We concern on facilities, cleanliness, stairs, and toilets." (A3)
"First, we provide good facilitation once the aircrafts landed from the airside: Bay and the security… We have to make sure the condition of our equipment: baggage belts or information counters…." (A4)
"We are lucky that we have police, soldiers from army and air force to take care for security." (A5)
"We did increase numbers of EOD staff (security)." (A6)

Other themes that came up during the interview include health care services, information signs, and bay allocation. One of the executives was pleased with the healthcare services provide by Thailand airports. Though healthcare was not identified as an important operational area in low-cost airline passenger, the executive felt that the provision of these services enhances appeal of the airport among passengers.

Information signs were identified as important facilities in airports as the views of low-cost carriers. However, only one airport executive felt that Thailand airports have excelled in terms of provision of information signs. Some interviews

were also happy with the equal treatment of passengers and carriers by the airports. Since low-cost carriers are typified by the lack of a hub, airports that serve these carriers are expected to treat all airlines equally (Jacobs Consultancy, 2007).

To summarize interview results related to the second research questions, some efficient operational areas were derived. Some points of airport safety & security, airport facilities, airport management, and airport staff were mentioned as impressive areas. However, numbers of efficient issues were less than those of important issues or improvement areas. Most of airline staff said there was nothing efficiently operated.

4.2.3 What Operational Areas Should Thailand Airports Improve? (RQ3)

The researcher also sought to find out what operational areas the low-cost airline staff felt that Thailand airports should improve for passengers or carriers. The staff's views were broad and diverse. All themes related to airport operation were emerged. The themes were compounded of airport facilities, airport service, airport staff, airport safety & security, airport infrastructure & condition, and airport management. At the same time, airport executives themselves perceived some areas should be improved such airport facilities, airport management, airport infrastructure & condition, and airport staff (Table 4.22).

In terms of airport facilities, increasing the number of connecting gates and parking lots appeared to the most pressing issues. Additional connecting gates were highlighted by the airline employees as a pressing issue. This finding not surprising as the number of waiting gate was identified as an important factor for airports targeting low-cost airlines. Some interviewees felt that airports should provide connecting gates to all airlines. Low cost airlines prefer to use connecting gates because they allow them to make quick turn hence save cost (de Neufville, 2008).

Many of the interviewees also felt that Thailand airports do not offer adequate parking lots for passengers and staff. Inadequate parking lots and high parking fees make it difficult for low cost airline passengers to drive themselves to the airport. The interviewee suggests that airports should provide airport bus in order to cater for the

Table 4.22 Improvement Needed Areas for the Low-Cost Carriers

LCC Staff's Perspectives	Airport Executives' Perspectives
1. Airport facilities – Connecting gates – Parking lots – Wi-Fi service – Toilets – Baggage claiming belts – Check-in counters – Waiting seats – Facilities for handicapped – Information signs	1. Airport facilities – Connecting gates – Toilets – Facilities for handicapped – Baggage claiming belts
2. Airport service – Equal service – Variety of food, goods, and restaurants – Reasonable food price	2. Airport management – Check-in system – Slot & bay allocation
3. Airport staff – Airport staff's attitudes & capabilities – Security staff	3. Airport infrastructure & condition – Terminal configuration
4. Airport safety & security – Safety measures	4. Airport staff – Airport staff's capabilities
5. Airport infrastructure & condition – Terminal configuration – Passenger pathway	
6. Airport management – Congestion management – Slot, bay, check-in counter allocation – Airport tax & fees	

ground transportation needs of passengers. This will not only facilitate consumption of airport services but will also add an extra source of revenue for the airport. It will also reduce the cost of air transportation thus increasing demand.

"This airport provides us with the connecting gate but 1 gate is used to serve 4 airlines which are not appropriate." (L1)

"When we have to use the remote bay, we need to allow passengers to walk to the terminal without bus services. Normally, shuttle buses are provided in the big and congested airports. In terms of passengers, most of them ask for parking lots…" (L8)

"Parking area is not sufficient." (L9)

"The airport should add or manage the aerobridges for all airlines or might provide transferred bus services from bay." (L11)

"And another important point is about parking area. The parking space is limited…" (L18)

Another surprising finding is a good number of the respondent felts that Thailand Airports need to provide free Wi-Fi services. The respondents reported that many passengers were asking for the Wi-Fi services. Many of the respondents felt the internet connection has become a basic service rather than a luxury service for air travelers. Consequently, airports need to provide free Wi-Fi services to all passengers.

Other areas of improvement that were identified during the interview include toilets, baggage claiming belts, check-in counters, waiting seats, and facilities for handicapped.

"Most of passengers ask for free Wi-Fi service since they have paid for airport tax or passenger service charge already." (L4)

"Toilets are quite less compared to huge numbers of passengers. Wi-Fi is also necessary for present travellers." (L11)

"Insufficient parking areas, defective baggage transfer at check-in, belts on arrival, connecting bridges, insufficient seats at departure hall, and WI-FI must be improved. Those things affect both passengers and airlines' processes." (L15)

"There is no lifts for those passengers in the terminal. In addition, Wi-Fi connection is lacked." (L19)

The respondents felt that the airports need to increase the number and improve the condition of toilets. Being always clean toilets were required for such airport services. The interviewees also believed that there was a need for the airports to increase the number of baggage claiming belts. Increasing the number of claiming belt will enhance airports' capacity to handle large numbers of visitors hence reducing waiting time and enhancing convenience.

Some interviewees reported that the check-in counters not only were in strange locations but performed improper condition. Not all check-in counters were set with

feed belts so airlines themselves might need some more staff to work on baggage check-in. The interviewees are also felt that the airports need to hire additional employees to assist in baggage loading.

As the airline staff's views, waiting seats were still required. Similar to the reasons of other facility's needs, a number of flights and growing passengers affect the facility provision. Especially, waiting seats were primary required at the departure gates. Passengers had paid for airport taxes so they should get proper services. The airline also recommended airports to care and improve facilities such as lifts or pathway especially for handicapped passengers. More, information signs should be improved to be more precise and functioned.

Facilities were considered into two perspectives. A few interviewees felt that Thailand airports lack sufficient capacity to cater for a large number of services. They recommend that airports put up additional facilities such as aircraft parking space, connection gates, check-in counters, toilets, claiming belts, and Wi-Fi service. The airports also need to improve the condition of existing facilities such as toilets, check-in counters, and waiting seats. There were also concerns regarding the lack of facilities and services that cater to disabled persons within Thailand's airports.

The airline employees also identified unequal treatment of airlines as a critical area that Thailand airport need to improve. There were also numerous complaints concerning unequal treatment of airlines by Thailand airports. Some responds felt that Thailand airports favor some airlines over others. They suggested that airports should reduce an equal treatment by provided the same price for same services. The low-cost airlines employees felt that Thailand airports provide better services to full-service airlines in terms of claim belt assignments, check-in counters, and bay assignment. One of the interviews reported that low-cost airlines are often left out of meetings involving airport stakeholders.

"This airport provides us with the connecting gate but 1 gate is used to serve 4 airlines which are not appropriate. We are not the first priority to be served by AOT but the full-service airline is." (L1)

"The airport should equally provide connecting gate to all airlines." (L3)

"Airport should be fair and sincere on managing parking bay." (L4)

"First of all, please know that AOT always keep TG and Bangkok Airways as the first priority of providing any services. Most of the time, we, the low-cost airlines are always assigned to park at the remote bay instead of connecting bridge." (L15)

"We don't feel we get the same service standard compared to TG." (L19)

In terms of ancillary services provided at airports, the respondents also felt that the airport should improve their food services. Low-cost carrier staff wanted airports to consider and improve on variety of goods, food and restaurants. More than a few respondents felt that airports need to provide a variety of food outlets that offer affordable meals. Especially, there were limited food stores for such low-cost passengers or staff. The price of both food and goods sold in airports must be decreased for low purchasing power passengers. This finding is surprising since low-cost airline passengers are associated with minimal frills.

Airports also need to improve competency, skills, attitude and knowledge of employees. One of the respondents felt that the airport needs foreign language speaking employees. In addition, airport staff should be continuously trained for multi issues. Especially, staff working on safety & security must be thoroughly screened before placement and well trained. Airports should be able to control the quality of outsourced staff worked for airports' tasks (Table 4.23).

Security was also mentioned as a critical area of improvement more than a few times. Some respondents pointed out that even if Thailand airports have done quite well in terms of security, there is still room for improvement. Stricter security measures need to be developed, and employees need to be trained on security issues.

A few interviews felt the need to improve the design of a terminal. The existing terminal design might perform malfunction on check-in counters or passenger pathway. The problems always occur when there were both enplaning passengers and deplaning passengers walking to and from aircrafts at the same time. Arriving and departing passengers do not have to share the same pathway.

In a relation to all above improvement areas previously mentioned, good management of airports must be better. Airport executives must be able to deal with congested flights and passengers. Enough facilities must be well planned and

Table 4.23 Sample Dialogues of Low-Cost Carrier Staff in a Relation to Improvement Areas of Airport Operations

Important Areas from LCC Staff's Perspectives	Sample Dialogues
1. Airport facilities – Connecting gates – Parking lots – Wi-Fi service – Toilets – Baggage claiming belts – Check-in counters – Waiting seats – Facilities for handicapped – Information signs	**L1:** This airport provides us with the connecting gate but 1 gate is used to serve 4 airlines which are not appropriate. **L2:** We want all flights to park at the connecting gate. It saves costs and time for us. If we are allocated with the remote bay, we have to rent the shuttle bus which is more expensive than using the connecting gate. **L3:** The airport should equally provide connecting gate to all airlines. Among 7 connecting gates, there are 5 gates for big size airplanes whereas other two are for only small size airplanes. We prefer to use the connecting gate since we can do a quick turn to save our costs. **L4:** Most of passengers ask for free Wi-Fi service since they have paid for airport tax or passenger service charge already. **L5:** As said, numbers of bays are insufficient. The airport has to serve both schedule flights and charter flights. Even our flight was assigned to use the bay with connecting gate but once the flight delay or other flight arrive prior the scheduled time, we have to use the remote bay **L7:** The airport should provide enough aerobridge for all flights since it would be easy to manage. We don't want to pay more on staff, maintenance, and rental space if we have to use our own ramp bus. **L11:** Toilets are quite less compared to huge numbers of passengers. Wi-Fi is also necessary for present travellers. **L18:** Passengers with wheel chairs should have equal opportunity to get the service from airports and airlines. **L21:** The most important thing to be improved here like in other airports, I think 'toilets' is needed. The airport should always make the toilets clean and enough.
2. Airport service – Equal service – Variety of food, goods, and restaurants – Reasonable food price	**L1:** We are not the first priority to be served by AOT but the full-service airline is. **L7:** We (the low-cost airlines) believe that TG always has the first priority to get the bridge and it's not fair for us even we pay the same rate of service. We are low-cost from passengers' eyes but we don't have any discounts from airport. Instead, we have to safe cost by ourselves. **L8:** Moreover, airport should provide more varieties on shops; I mean the standard shops without monopoly. The only one restaurant in the airport seems to force passengers not to have food since the high price. An airport should better think on lowering the rental fee. **L9:** Shops and restaurants are limited. No halal food here. **L11:** I think that many parts need to be improved. An airport unequally treats for different types of airlines. We sense that TG and Bangkok Airways are better treated and facilitated over the low-cost airlines.

Table 4.23 (Continued)

Important Areas from LCC Staff's Perspectives	Sample Dialogues
3. Airport staff	**L2:** They should be well trained to strictly screen all airport users equally. I know that there are high staff turnover for that job.
– Airport staff's attitudes & capabilities	**L6:** I am not sure that all airport staff who works on security task is well trained or not. Since there is high turnover of outsourcing staff, I am not sure the quality.
– Security staff	**L9:** Some staff cannot speak English and might not be helpful enough.
	L12: In case of emergency, I don't think the security staff can deal with it.
	L13: The most serious issue is about security staff. I don't know the recruitment progress of such staff but the young staff cannot make me feel trusted and safe.
4. Airport safety & security	**L2:** Another thing about the security is about the security staff at each check point.
– Safety measures	**L6:** Even the security is quite good hear, it still need strict concern. All airport staff should pay attention to safety and security as the first priority. We are still afraid of terrorism.
	L9: The security checks should be stricter…
	L25: The security check should be stricter. Security staff should not talk each other while working.
	L26: I cannot trust on security staff. They are always new for me.
5. Airport infrastructure & condition	**L1:** If it's possible, I prefer the 1-floor terminal for both departure and arrival. It would be easy and quick for us and the passengers.
– Terminal configuration	**L2:** Since the arrival passengers and departure passengers have to use the same corridor, it eases the passengers to lose the way or go to the wrong directions. Our airline staff has to stand at different point to make sure that the passengers can go to the right way.
– Passenger pathway	**L4:** If the airport can better position the check-in counters to be in the same area, it will ease passengers for check-in procedures.
	L7: Besides the airside, the position of check-in counter here is strange. It's hard to find the check-in counters. A number of passengers have complained on that.
	L14: At the corridor, there are only two counter-lanes for both arriving and departing passengers which will cause confusing for those passengers.
6. Airport management	**L1:** Moreover, an airport should well consider on flight timetable proposed by each airline. An airport should not allow all proposed flights to be operated at the same time.
– Congestion management	**L16:** The airport should consider the capacity on parking bay with high frequency of flights.
– Slot, bay, check-in counter allocation	**L22:** I think that passengers already paid for their services via airport tax, they good gain reasonable services.
– Airport tax & fees	**L27:** We prefer using bridge instead of other choices. We can manage enplaning and deplaning passengers by the limited time.
	L29: Claiming belt is not sufficient. Also, departure hall is small. Fewer parking spaces. Less trolleys.

designed so that their allocation would be efficient. Airline staff requested airport to allocate slot, bay, check-in counters properly for all airlines.

Another noteworthy issue that was raised during the interview concerns the taxes charged on passengers and airlines by the airports. More than a few employees felt that the airports charges were too high. It is not surprising that low-cost airline's employees are concerned about taxes since low-cost airlines compete on price (de Neufville, 2008). They focus on providing the lowest fares since their passengers are extremely sensitive to price changes. The respondents felt that reducing the taxes would increase demand for air transportation.

The researcher also sought to find out airport executives' views concerning areas that Thailand airports need to improve. The senior executives felt that provision of connecting gates and check-in system are the areas that Thailand airports should prioritize when planning improvement efforts. The senior executives also felt the need for airports to increase the number and improve the condition of check-in counters and connecting gates. Number of connecting gates were not enough compared to number of flights operated at airports. Both full-service and low-cost carriers preferred using bay with connecting gates over the remote bays.

"It would be better to apply the CUTE check-in system which will manage long queue or congestion in front of the check-in counters.

CUTE system will be good for both airport and airline." (A2)

"If it's possible we should hire the new check-in system which will be related to counter allocation to our airport. To utilize check-in counters, the current fixed system should be reviewed." (A4)

"And if we can adopt the CUTE system for check-in counters, it would be good for airport and airlines." (A6)

"Now, there are just 2 aerobridges which need to be added to 3-4 bridges to afford the high number of flights. In the near future, also, we might need CUTE for our check-in counter management to utilize our check-in counters in hands for all airlines and all flights equally" (A7)

The senior executives suggested that the airports need to do more so as to ensure equitable allocation of slots, check-in counter and bays. Currently, assigning amount and location of check-in counters was manual based so it would be fair for airlines and easy for airports to employ the automatic check-in counter assignments in the near future. Some other airport facilities would be improved. Other areas of facility improvement that were frequently mentioned include; increasing the number and condition of toilets; provision of facilities for disabled, and increasing the number of baggage-claiming belts.

"At this airport, both domestic and international flights are in the same terminal. If an airport can provide the low-cost terminal for all low-cost carriers, we might be able to provide proper services and functions as LCCs need. It might be less convenient but it's cheaper and easier to be managed." (A1)

"We are more than pleased if any airlines want to operate flights here but it should be the time that we have enough slots" (A3)

"We don't have enough and proper located elevators for handicapped now. It's one of the building restrictions since the building is built for long time." (A5)

"For low-cost, we did not assign the priority in using the connecting gates but we use 'First comes, First served' concept." (A6)

As airport executives perceived that the terminal was quite old with old-fashioned designs, airport terminal should be configured in order to provide better service functions. Some airport executives realized that airport staff's capabilities should be enhanced.

"At this airport, both domestic and international flights are in the same terminal. In the near future, we planned to separate domestic terminal from international terminal." (A1)

"Sometimes we cannot well control the quality of outsourcing tasks; housekeeping or cleaners or security staff." (A2)

"We also have the limitation on our staff. We might have to reconsider both numbers and responsibility of airport staff." (A5)

"We also improve language capability of our staff. Besides English, Chinese and Japanese are important." (A6)

"Now, this airport is quite congested and one reason is because of the physical limitation. Now, there are just 2 aerobridges which need to be added to 3-4 bridges to afford the high number of flights." (A7)

In brief, many operational areas were pointed to be improved. Both low-cost carrier staff and airport executives did agree that Thailand airport must urgently improve on airport facilities such as connecting gates, toilets, handicapped facilities, or baggage claiming belts. Some other facilities, for examples, parking area, Wi-Fi service, proper check-in counters, waiting seats, and information signs were requested by airline staff. Besides airport facilities, airport service was the second priority for improvement. Low-cost carrier staff felt that they get unequal practices compared to full-service carriers. In addition, airport staff must be well trained and controlled in terms of quality. Better safety & security measures, better airport condition and better management on airport capacity and fees were desired as well.

4.2.4 A summary of Operational Efficiencies of Thailand Airport

Operational efficiencies of Thailand airports were evaluated by low-cost carrier staff and their results shown in different ways. Both positive and negative ways were derived. Also, several operational themes including safety & security, facilities & equipment, staff, management, services, and infrastructure & condition were emerged. This section demonstrated the overall results of airports' operational efficiencies. Two-side results were revealed as areas of efficiency and areas of inefficiency. However, each area did not entirely belong to one specific theme but it might relate to the other themes, inevitably (Table 4.24).

Four themes (safety & security, facilities & equipment, staff, and management) had both positive and negative results with different issues. That is, a specific theme can comprise of both efficient areas and inefficient areas. However, there were just inefficient areas on airport services and airport infrastructure & condition.

Table 4.24 Operational Efficiencies of Thailand Airport from the View of Low-Cost Carriers

Operational Themes	Areas of Efficiency (+)	Areas of Inefficiency (-)
1. Airport safety & security	– Security check points – Agencies cooperation – Standard equipment	– Restrictiveness of security staff – Capability of security staff
2. Airport facilities & equipment	– Wide ranges of airport services	– Number of connecting gates – Space of parking lots – Wi-Fi services – Toilet services (number & condition) – Number & position of baggage claiming belts – Location of check-in counters – Condition of check-in counters and feed belts – Less seats in waiting areas – Handicapped facilities (lifts, ramp) – Information signs (Clearness & multi-language)
3. Airport staff	– Friendly staff	– Staff' s communication & languages – Staff's attitudes
4. Airport management	– Airport meetings with all parties	– Allocation of slot, connecting gate, and check-in counters – Congestion management (carrying capacity) – Relationship between Airport tax / fee and provided services
5. Airport services	–	– Unequal treatment to all airlines – Choices of food, goods, and restaurants – Reasonable food prices
6. Airport infrastructure & condition	–	– Interior design on airports' terminal – Corridor

4.2.4.1 Areas of Efficiency

1) Airport safety & security

Thailand airports efficiently operated well on security check points. In terms of quantity, Thailand airports provided enough security check points so that airport customers felt comfortable once they arrived airports. At four airports have been explored, security check points were set at the front gates before getting inside airport terminal. All persons and their belongings were required to be checked through the screening machines. In general, airport passengers must be checked at least three times which were 1) terminal entrance, 2) departure gate entrance, and 3) inside the departure hall. All airports have provided security equipment with minimum standard. In addition, there was another security check point prior the airport' entrance at Hat Yai International Airport. At Hat Yai International Airport, there was a good cooperation from military forces altogether with Explosive Ordnance Disposal—EOD. The good cooperation on security agencies were clearly shown not only at Hat Yai but at Chiang Mai International Airport. Polices and soldiers from both royal Thai air force and royal Thai army worked at the same service unit at Chiang Mai International Airport. Moreover, all Thailand airports had the fire unit in case of emergency.

2) Airport facilities & equipment

The only good point of airport facilities was that airports provided wide ranges of services. The airport has basic facilities & equipment needed for airlines and passengers. Basic facilities were such as parking areas, security check points, trolleys, check-in counters, seats, waiting areas, toilets, departure hall, baggage claim belts, flight monitors, health services, or airline offices. Moreover, ancillary services were also provides, for examples, convenient stores, souvenir shops, restaurants, post offices, bank services, car rental services, tour/hotel services, public telephone, or even massage shops. In shorts, Thailand airports had many services.

3) Airport staff

Only the friendliness of airport staff was perceived to be good for low-cost carriers. Undoubtedly, since airport staff and airline staff had to work together to make their operation successful, working with friendly staff facilitated low-cost carrier staff to work with.

4) Airport management

Airports did not have only airport meetings with relevant airport functions themselves but there were regular airport meetings for other related parties (concessionaires, outsourced companies, or airlines). This kind of meetings enhances airlines including low-cost carriers to give feedback to airport executives on airport's operation.

4.2.4.2 Areas of Inefficiency

1) Airport safety & security

Even some areas on safety & security were accepted, security staff did not totally perform well on restrictiveness and their capabilities. It was still found that security staff did not seriously check all persons who get inside airports. They sometimes skipped some persons they were familiar with. Most of the time security staff kept talking each other while they were working. Even their hands worked on their tasks but their eyes did not see the things or persons they were checking. Low-cost carrier staff felt that high number of security staff's turnover might cause unqualified security staff. Thus, intensive training and conducts were necessary.

2) Airport facilities & equipment

A number of areas on facilities & equipment were raised as inefficient areas. Connecting gates were popularly mentioned as low-cost carriers prefer using connecting gate-bays over remote bays to save their operating costs. Using connecting gates less consume turnaround time for each flight so low-cost carriers will do save their costs. Since low-cost carriers, airports' customers, have to pay for all services they desire to use, they exactly need just invaluable services. Number of connecting gates was not yet enough for all flights operated at airports and the allocation on the gates was not consistent.

Besides of connecting gates, low-cost carriers needed good check-in counters as other airlines did. Some check-in counters of some low-cost carriers did not have automatic feed belts to load checked baggage whereas the full-service airlines' counters had. In addition, the position of check-in counters was unfairly located among airlines. Ones of the low-cost carriers were assigned at the hidden position. In terms of baggage belts on arrival, if there were two belts, flights of

low-cost carriers were usually assigned to use the belt number two where passengers had to walk a bit longer for their baggage. At the same time, full-service carriers always get the good position of check-in counters and baggage claiming belts.

A growing number of low-cost carrier passengers caused airport became congested many times. Airports cannot manage well on airport space or even enough seats. Many times, since all waiting seats were occupied, low-cost carrier staff found that some passengers had to stand while waiting for their flights in the departure hall. Low-cost carrier staff perceived that there were several areas that airport did not efficiently operate (i.e., Wi-Fi, toilets, handicapped facilities, and information signs).

3) Airport staff

Low-cost carrier staff found that most of airport staff working for service substances was not able to speak in foreign languages. Airport passengers comprised not only domestic Thais but also foreigners. Information staff should be able to talk at least Thai and English. It would be fruitful if airport staff can facilitate foreign passengers with their capability on other foreign languages. Also, airport staff did not have positive attitudes on low-cost carriers. This perception was because low-cost carriers and full-service carriers were dissimilarly treated.

4) Airport management

In a relation to all inefficiencies, good management was necessary. Currently, airports did not manage well on resource allocation. As said, some obstacles on allocating slots, connecting gates, and check-in counters were found. Too, congestion must be realized and managed so that everyone can satisfy. Even the rates of airport tax & fees were clearly announced and accepted by all airport users, airport management should review on what airports get & give and what airport customers give & get. Low-cost carrier staff did not feel airport services gained were value compared to paid amounts.

5) Airport services

Again, unequal services were perceived by low-cost carriers. The low-cost carriers believed full-service carriers always get better services over the low-cost carriers in different ways as mentioned. Other things were about choices and prices of some services. Even Thailand airports had variety of services but some

services at some airports were still needed. Food services were limited at all Thailand airports. There was the concessional restaurant served for food at each airport. That existing restaurant provided food with a high price so that most of low-cost carrier passengers and staff cannot afford. Not only the restaurants but also all stores sold products with too high price to achieve.

6) Airport infrastructure

The infrastructure of airport did not directly refer to airports' operations but it related to other airport operational functions. For examples, the existing design of the terminal caused difficulties for both enplaning and deplaning passengers. More, passengers of different flights might have to use the same corridor at the same time. Thus, it was an airlines' risk to let passengers of other flights to the another. Airlines had protected that circumstance by preparing airline staff & signs at the corridors for every flight.

To conclude, as viewed by low-cost carrier staff, safety & security, facilities & equipment, and airport staff were the most important areas for airport customers. However, other related areas on management, service, and infrastructures were significant as well. In addition, Thailand airports had both efficient and inefficient areas of operation as the sight of low-cost carrier staff (Figure 4.3). Number of security check points, security cooperation, equipment on safety, ranges of services, friendly staff, and arranging airport meetings were airports' strengths. Nevertheless, restrict practices & capabilities of security staff, airline needed facilities, passenger needed facilities, language ability of airport staff, staff's attitudes, service allocation, equal treatments, price of food & goods, and interior designs were seen as inefficient areas that affect customers' satisfaction.

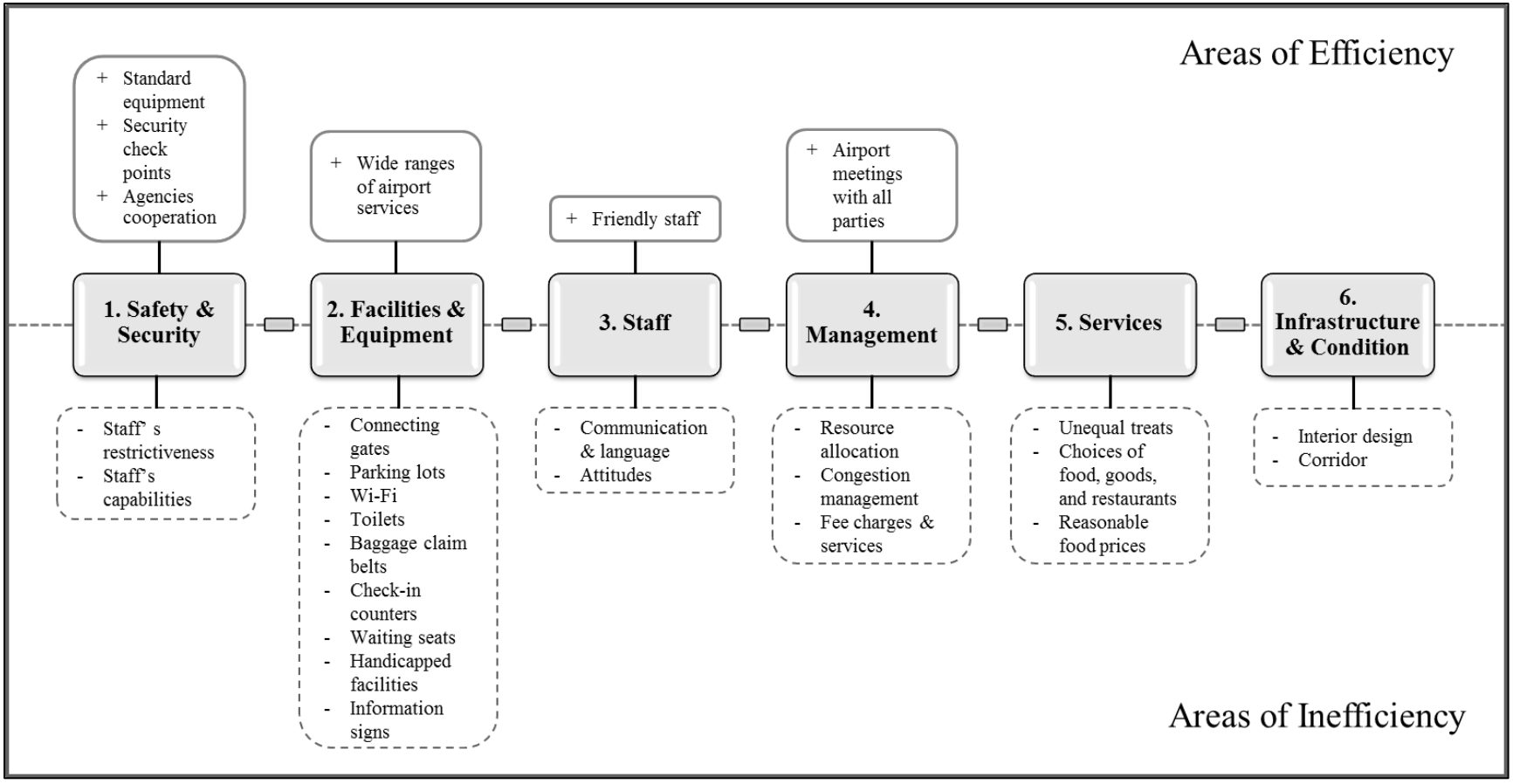


Figure 4.3 Efficient & Inefficient Areas of Thailand Airport Operation from the Views of LCC

4.3 Levels of Importance and Efficiency of Thailand Airports' Operational Attributes and Operational Procedures (Research Objective 2)

In a relation to research objective 2, level of importance and efficiency on Thailand airport operational attributes and operational procedures are investigated. Beneath the main research question 'What are the levels of importance and efficiency toward Thailand airport operational attributes and operational procedures?', there were six sub research questions to be answered (4.3.1-4.3.6).

4.3.1 What are the Importance Levels for Thailand Airports' Operational Attributes and Operational Procedures? (RQ4)

According to the survey, the operational attributes that were rated to be strongly important included washrooms ($\bar{x}$ = 5.42), security screening ($\bar{x}$ = 5.38), security staff ($\bar{x}$ = 5.30), safety measures ($\bar{x}$ = 5.29), check-in counters ($\bar{x}$ = 5.23), information signs ($\bar{x}$ = 5.22), Wi-Fi/internet services ($\bar{x}$ = 5.21), baggage check-in ($\bar{x}$ = 5.18), flight information screen ($\bar{x}$ = 5.15) and airport staff ($\bar{x}$ = 5.08) (Table 4.25). The levels of importance were assessed depending on frequency count rather than the mean scores. The revealed results were confirmed by the interview results such as one shown as follows.

> *"Information signs are important. The signs must be clearly defined and placed at the right position. In relation to information signs, terminal map is important too. The reception counter should be located at the noticeable place. Security and toilets are both important for airport passengers." (P24)*

In addition, respondents felt that the baggage claiming system, airport accessibility, broadcasting, seat assignments, escalators and information desk are important. Clients were concerned about the availability of facilities such as departure and arrival halls, connecting gate and baggage drop services. Some of the operation

attributes that ranked lowly include the availability of catering facilities, car rental facilities, the availability of public telephone, retail shops, and prayer rooms.

Table 4.25 Importance Mean Ranking on Airport Operational Attributes

(n=423)

Rank	Operational Attributes	Mean	S.D.	Importance Level*	% Counts
1	**Washrooms / toilets**	**5.42**	**0.765**	**6: Strongly important**	55.8
2	**Security screening**	**5.38**	**0.931**	**6: Strongly important**	59.8
3	**Security staff**	**5.30**	**0.897**	**6: Strongly important**	52.0
4	**Safety measures**	**5.29**	**0.946**	**6: Strongly important**	54.1
5	**Check-in counters**	**5.23**	**0.897**	**6: Strongly important**	44.7
6	**Information signs**	**5.22**	**0.941**	**6: Strongly important**	46.6
7	**Wi-Fi / internet services**	**5.21**	**1.130**	**6: Strongly important**	55.1
8	**Baggage check-in**	**5.18**	**0.871**	**6: Strongly important**	41.1
9	**Flight information screen**	**5.15**	**1.000**	**6: Strongly important**	45.9
10	**Airport staff**	**5.08**	**0.918**	**6: Strongly important**	38.1
11	Baggage claiming system	4.99	0.887	5: Important	41.4
12	Accessibility to the airport	4.97	1.045	5: Important	38.3
	Health services	4.97	1.040	6: Strongly important	38.1
13	Passenger steps / airfield buses	4.90	0.930	5: Important	40.0
	Baggage belts (arrival)	4.90	0.923	5: Important	41.4
14	Broadcasting / announcement	4.80	1.127	5: Important	33.8
15	Aerobridges / connecting gate	4.78	0.969	5: Important	40.9
16	Seat assignment & waiting area	4.77	0.835	5: Important	40.2
	Departure hall	4.77	0.987	5: Important	41.8
17	Baggage carts / trolley	4.74	1.006	5: Important	37.6
18	*Information desk / counters*	*4.71*	*1.100*	*5: Important*	*31.4*
19	*Arrival hall*	*4.68*	*0.973*	*5: Important*	*40.4*
20	*Banks / exchange services*	*4.59*	*1.222*	*5: Important*	*35.2*
21	*Stairway / lifts / escalators*	*4.56*	*1.148*	*5: Important*	*36.6*
22	*Baggage drop service*	*4.51*	*1.135*	*5: Important*	*35.7*
23	*Parking facilities*	*4.38*	*1.612*	*6: Strongly important*	*30.7*
24	***Restaurant / eating facilities***	***4.22***	***1.322***	***4: Somewhat important***	***38.8***
25	***Car rental facilities / taxi***	***4.13***	***1.227***	***4: Somewhat important***	***32.9***
26	***Tour / hotel services***	***4.07***	***1.224***	***4: Somewhat important***	***32.2***
27	***Public telephone***	***4.00***	***1.404***	***4: Somewhat important***	***30.0***
28	***Retail shops***	***3.95***	***1.156***	***4: Somewhat important***	***36.6***
29	***Prayer room***	***3.85***	***1.607***	***4: Somewhat important***	***27.0***
30	***Post office***	***3.80***	***1.230***	***4: Somewhat important***	***32.2***
	Grand Mean	**4.74**	**.636**	**5: Important**	**33.3**

Note: Importance levels derived from frequency counts at each importance level, not the mean scores.

Operational procedures are critical in customer satisfaction. The study categorized the study procedures into two major categories (arrival procedures and

departure time). In the arrival operational procedures, the mean score of processes such as airplane to arrival hall ($\bar{x}$ = 4.79), arrival hall to baggage claim ($\bar{x}$ = 4.89), baggage to public or rental services ($\bar{x}$ = 4.59), and terminal gate to ground transport ($\bar{x}$ = 4.86) are important to passengers (Table 4.26). The study reports that the arrival procedures are important in the overall airspace management and management of congestion in the terminal. Passengers feel that the movement and procedures involved from the time the airplane lands to the terminal gate are important.

The departure procedures assessed procedures from ground transport to enplane. These processes involved movements to the terminal gate ($\bar{x}$ = 4.89), to check-in counters ($\bar{x}$ = 4.94), to security screening ($\bar{x}$ = 4.95), to departure hall ($\bar{x}$ = 5.00), and to airplane ($\bar{x}$ = 4.99). These processes are rated as important to clients. As resulted, the average mean scores of all departure procedures were higher those of the arrival procedures. This implied that passengers gave importance on departure processes over the arrival process. In a study conducted by Loo (2008), operation procedures such as airport access time and flight frequency are critical operation procedures vital in the overall performance of the airport.

Table 4.26 Importance Mean Ranking on Airport Operational Procedures

(n = 423)

Rank		Operational Procedures	Mean	S.D.	Importance Level*	% Counts
7	1.	Airplane to arrival hall (Deplane)	4.79	1.023	5: Important	40.0
5	2.	Arrival hall to baggage claim	4.89	.893	5: Important	43.3
8	3.	Baggage claim to public/retails services	4.59	1.040	5: Important	40.4
6	4.	Terminal gate to ground transport	4.86	.939	5: Important	41.8
		Mean: Arrival Procedures	***4.78***	***.862***		
5	5.	**Ground transport to terminal**	**4.89**	**.955**	**5: Important**	**43.3**
4	6.	**Terminal gate to check-in counters**	**4.94**	**.869**	**5: Important**	**46.8**
3	7.	**Check-in counters to security screening**	**4.95**	**.908**	**5: Important**	**43.3**
1	8.	**Security screening to departure hall**	**5.00**	**.894**	**5: Important**	**42.8**
2	9.	**Departure hall to airplane (Enplane)**	**4.99**	**.853**	**5: Important**	**42.8**
		Mean: Departure Procedures	***4.95***	***.781***		
		Grand Mean	**4.88**	**.777**	**5: Important**	**42.7**

Note: Importance levels derived from frequency counts at each importance level, not the mean scores.

4.3.2 What Significant Variables of Passengers' Socio-Demographic Profiles Show Different Levels of Importance for Thailand Airports' Operational Attributes? (RQ5)

After assessing the important operational attributes and procedures, the study explored what socio-demographic profiles affects the levels of importance as reported by the respondents. Socio-demographic profiles of importance included gender, age, nationality, marital status, religion, education, occupation and income. Studies have been conducted relating to airport evaluation based on discrete choice models. These studies have resulted in the formulation of models that predicts the choice of an individual given a certain range of alternatives based on the relevant attributes. The study focused explored 33 attributes to investigate the association between the ranking of the attribute and the socio-demographic characteristics of the respondent. The statistical testing indicates that there was a significant relationship (P = 0.05) between four variables and total importance levels. The four variables comprised of gender (P = .002), nationality (P = .000), religion (P = .000), and income (P = .000) (Table 4.27).

Among results testing on 33 operational attributes, all socio-demographic variables except 'occupation' showed significant results on some operational attributes in a different ways. Overall results demonstrated that nationality had significant results on 22 attributes whereas religion, income, age, gender, education, and marital status showed significant results on 20, 14, 12, 6, 5, and 2 attributes, respectively.

4.3.2.1 Gender

In relation to the gender of the respondents, it was observed that there was a significant relationship (t = -3.062, P = .002). The importance of various attributes including the availability and location of the parking facilities (P = .000), seating assignment (P = .000), availability of lifts/escalators (P = .001), broadcasting/ announcement (P = .007), and security screening (P = .001), is critical. In addition, eating facilities (P = .009), baggage drop services (P = .001), baggage carts/trolley (P = .000), and hotel services (P = .016) are important. Overall, female were concerned than males in almost all attributes ($\bar{x}$ female = 4.83, $\bar{x}$ male = 4.64, P =.002).

Table 4.27 Overall Statistical Testing Results on Socio-Demographic Variables to Importance Levels of Airport Operational Attributes

Attributes / Variables	Gender	Age	Nationality	Marital status	Religion	Education	Occupation	Income
1. Accessibility to the airport	.166	.122	.037*	.657	.000*	.303	.433	.521
2. Parking facilities	.000*	.914	.000*	.309	.000*	.126	.064	.000*
3. Seat assignment & waiting area	.000*	.816	.022*	.702	.082	.267	.237	.051
4. Stairway / lifts / escalators	.001*	.701	.005*	.704	.000	.080	.117	.002*
5. Information desk / counters	.187	.670	.908	.886	.428	.035*	.417	.042*
6. Flight information screen	.189	.024*	.047*	.163	.615	.240	.760	.079
7. Broadcasting / announcement	.007*	.665	.000*	.728	.000*	.000*	.631	.000*
8. Information signs	.106	.041	.844	.129	.043*	.326	.251	.243
9. Airport staff	.057	.032*	.026*	.527	.004*	.153	.574	.127
10. Security screening	.001*	.394	.000*	.737	.000*	.241	.046	.000*
11. Check-in counters	.138	.414	.026*	.082	.014	.435	.574	.147
12. Baggage check-in	.160	.750	.792	.056	.881	.040*	.128	.638
13. Retail shops	.088	.097	.005*	.530	.000*	.136	.444	.000*
14. Restaurant / eating facilities	.009*	.171	.091	.746	.154	.923	.407	.619
15. Departure hall	.854	.471	.000*	.159	.000*	.393	.279	.000*
16. Aerobridges / connecting gate	.654	.207	.010*	.299	.000*	.122	.462	.075
17. Passenger steps / airfield buses	.539	.023	.000*	.007*	.000*	.198	.056	.103
18. Arrival hall	.075	.155	.000*	.204	.000*	.012*	.795	.005*
19. Baggage claiming system	.732	.089	.741	.397	.053	.386	.234	.295
20. Baggage belts (arrival)	.157	.065	.095	.405	.044*	.487	.523	.055

Table 4.27 (Continued)

Attributes / Variables	Gender	Age	Nationality	Marital status	Religion	Education	Occupation	Income
21. Baggage drop service	.001*	.144	.945	.232	.080	.110	.292	.216
22. Baggage carts / trolley	.000*	.246	.007*	.105	.020	.249	.049	.002*
23. Tour / hotel services	.016*	.009*	.022*	.571	.002*	.373	.021	.002*
24. Car rental facilities / taxi	.071	.206	.000*	.513	.000*	.257	.130	.000
25. Safety measures	.013*	.069	.000*	.309	.000*	.646	.376	.010
26. Security staff	.118	.031*	.000*	.368	.002*	.627	.015	.130
27. Health services	.822	.000*	.095	.317	.206	.858	.019	.021*
28. Washrooms / toilets	.985	.316	.489	.610	.639	.709	.329	.633
29. Prayer room	.154	.535	.000*	.955	.000*	.049	.159	.000*
30. Banks / exchange services	.638	.000*	.906	.011*	.132	.125	.487	.072
31. Post office	.011*	.239	.000*	.331	.000*	.036*	.336	.000*
32. Public telephone	.015*	.043	.000*	.077	.000*	.124	.007	.000*
33. Wi-Fi / internet services	.882	.211	.746	.455	.003*	.646	.189	.586
Average Importance	**.002***	**.079**	**.000***	**.298**	**.000***	**.036**	**.147**	**.000***
Number of significant attributes	**12**	**6**	**22**	**2**	**20**	**5**	**0**	**14**

Note: 0.05 statistical significant level

Major differences were noted in parking facilities ($\bar{x}$ female = 4.63, $\bar{x}$ male = 4.09, P =.000), public telephone ($\bar{x}$ female = 4.16, $\bar{x}$ male = 3.82, P =.015), and baggage carts/trolley ($\bar{x}$ female = 4.91, $\bar{x}$ male = 4.56, P =.000) (Table 4.28). The rising demand for air travel has led to congestion in airport surface access and roads leading to overcrowding in the car-park facilities (Budd, Ison, & Ryley, 2011).

Table 4.28 Gender Comparison on Importance Levels of Operational Attributes

Attributes	Male (n = 198)		Female (n = 225)		t	df	P-value
	x̄	SD	x̄	SD			
1. Accessibility	4.90	1.104	5.04	.988	-1.386	421	.166
2. Parking facilities	4.09	1.733	4.63	1.455	-3.517	421	.000*
3. Seat assignment	4.57	1.039	4.95	.967	-3.905	421	.000*
4. Stairway / lifts / escalators	4.36	1.246	4.72	1.028	-3.261	421	.001*
5. Information desk	4.64	1.170	4.78	1.033	-1.320	421	.187
6. Flight information screen	5.08	1.077	5.21	.924	-1.316	421	.189
7. Broadcasting	4.64	1.241	4.94	.998	-2.719	421	.007*
8. Information signs	5.14	1.016	5.28	.865	-1.619	421	.106
9. Airport staff	4.99	.951	5.16	.882	-1.909	421	.057
10. Security screening	5.21	1.030	5.52	.808	-3.489	421	.001*
11. Check-in counters	5.16	.958	5.29	.802	-1.486	421	.138
12. Baggage check-in	5.12	.874	5.24	.867	-1.408	421	.160
13. Retail shops	3.84	1.205	4.04	1.105	-1.710	421	.088
14. Restaurant / eating facilities	4.07	1.151	4.35	1.042	-2.629	421	.009*
15. Departure hall	4.78	1.048	4.76	.933	.185	421	.854
16. Aerobridges	4.76	.978	4.80	.964	-.449	421	.654
17. Passenger steps / buses	4.87	.989	4.92	.876	-.615	421	.539
18. Arrival hall	4.59	1.017	4.76	.928	-1.787	421	.075
19. Baggage claiming system	4.97	.931	5.00	.848	-.343	421	.732
20. Baggage belts (arrival)	4.83	.951	4.96	.895	-1.417	421	.157

Table 4.28 (Continued)

Attributes	Male (n = 198)		Female (n = 225)		t	df	P-value
	$\bar{x}$	SD	$\bar{x}$	SD			
21. Baggage drop service	4.31	1.146	4.68	1.101	-3.315	421	.001*
22. Baggage carts / trolley	4.56	1.068	4.91	.919	-3.634	421	.000*
23. Tour / hotel services	3.91	1.229	4.20	1.206	-2.411	421	.016*
24. Car rental facilities / taxi	4.02	1.280	4.23	1.173	-1.810	421	.071
25. Safety measures	5.17	1.076	5.40	.802	-2.492	421	.013*
26. Security staff	5.23	.996	5.37	.797	-1.565	421	.118
27. Health services	4.95	1.105	4.98	1.020	-.225	421	.822
28. Washrooms / toilets	5.42	.761	5.42	.770	.019	421	.985
29. Prayer room	3.73	1.699	3.96	1.517	-1.427	421	.154
30. Banks / exchange services	4.62	1.215	4.56	1.231	.471	421	.638
31. Post office	3.62	1.462	3.96	1.267	-2.558	421	.011*
32. Public telephone	3.82	1.444	4.16	1.352	-2.443	421	.015*
33. Wi-Fi / internet services	5.20	1.116	5.21	1.145	-.148	421	.882
Average Scores	**4.64**	**0.647**	**4.83**	**0.616**	**-3.062**	**421**	**.002***

Note: t-test at 0.05 statistical significant level

4.3.2.2 Age

An F-test analysis of variance between age and importance level was conducted among the 33 variables. Between groups analysis indicates that there was a significant importance in flight information screen (P = .024), information signs (P = .041), airport staff (P = .032), passenger steps (P = .023), tour/hotel services (P = .009), security staff (P = .031), health services (P = .000), banks/exchange service (P = .000) and public telephone (P = .043) (Table 4.29).

Multiple comparisons were employed to test the differences between age groups. The results found that there were differences between age groups on information signs, passenger steps/airfield buses, and public telephone. On flight information screen, 51-60 years old passengers gave higher importance on flight information screen over those 11-20 years old passengers. However, they significantly

Table 4.29 Analysis of Variance between Age and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.752	.122
2. Parking facilities	.297	.914
3. Seat assignment	.447	.816
4. Stairway / lifts / escalators	.599	.701
5. Information desk / counters	.639	.670
6. Flight information screen	2.622	.024*
7. Broadcasting / announcement	.646	.665
8. Information signs *(Significant differences between groups were not found)*	2.344	.041*
9. Airport staff	2.466	.032*
10. Security screening	1.040	.394
11. Check-in counters	1.006	.414
12. Baggage check-in	.534	.750
13. Retail shops	1.879	.097
14. Restaurant / eating facilities	1.556	.171
15. Departure hall	.915	.471
16. Aerobridges / connecting gate	1.444	.207
17. Passenger steps / buses *(Significant differences between groups were not found)*	2.642	.023*
18. Arrival hall	1.613	.155
19. Baggage claiming system	1.925	.089
20. Baggage belts (arrival)	2.093	.065
21. Baggage drop service	1.656	.144
22. Baggage carts / trolley	1.340	.246
23. Tour / hotel services	3.093	.009*
24. Car rental facilities / taxi	1.448	.206
25. Safety measures	2.064	.069
26. Security staff	2.494	.031*
27. Health services	4.537	.000*
28. Washrooms / toilets	1.185	.316
29. Prayer room	.821	.535
30. Banks / exchange services	4.557	.000*
31. Post office	1.358	.239
32. Public telephone *(Significant differences between groups were not found)*	2.310	.043*
33. Wi-Fi / internet services	1.434	.211
Total Importance	**1.990**	**.079**

Note: ANOVA test at 0.05 statistical significant level

rated importance levels on airport staff lower than respondents who were between 31-40 years. On tour/hotel services, respondents of 11-20 years group gave higher importance than respondents of 31-40 age groups and 51-60 age groups.

Unsurprisingly, aging passengers at 51-60 years highly concerned on security staff over younger passengers (21-50 years). Respondents between 51-60 years gave importance levels to health services lesser than those between 11-20 years, 21-30 years, and 31-40 years. Respondents between 11-20 years old rated banks/exchange services in higher importance over the other age groups (Table 4.30).

Table 4.30 Multiple Comparison between Different Age Groups on Importance Scores

Attributes	Age Groups						
6. Flight information screen	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 11-20 years old	4.70	-	-	-	-	(.766)*	-
2 21-30 years old	5.24	-	-	-	-	-	-
3 31-40 years old	5.20	-	-	-	-	-	-
4 41-50 years old	5.00	-	-	-	-	-	-
5 51-60 years old	4.47	-	-	-	-	-	-
6 61-70 years old	5.00	-	-	-	-	-	-
9. Airport staff	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 11-20 years old	5.40	-	-	-	-	-	-
2 21-30 years old	5.09	-	-	-	-	-	-
3 31-40 years old	5.12	-	-	-	-	(.704)*	
4 41-50 years old	5.17	-	-	-	-	-	-
5 51-60 years old	4.41	-	-	-	-	-	-
6 61-70 years old	4.67	-	-	-	-	-	-
23. Tour / hotel services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 11-20 years old	5.20	-	-	(.394)*	-	(.482)*	-
2 21-30 years old	4.13	-	-	-	-	-	-
3 31-40 years old	3.92	-	-	-	-	-	-
4 41-50 years old	4.25	-	-	-	-	-	-
5 51-60 years old	3.59	-	-	-	-	-	-
6 61-70 years old	4.00	-	-	-	-	-	-
26. Security staff	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 11-20 years old	5.40	-	-	-	-	-	-
2 21-30 years old	5.33	-	-	-	-	-	-
3 31-40 years old	5.35	-	-	-	-	-	-
4 41-50 years old	5.35	-	-	-	-	-	-
5 51-60 years old	4.59	-	(.740)*	(.766)*	(.766)*	-	-
6 61-70 years old	5.00	-	-	-	-	-	-
27. Health services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 11-20 years old	5.50	-	-	-	-	-	-
2 21-30 years old	5.00	-	-	-	-	-	-
3 31-40 years old	5.10	-	-	-	-	-	-
4 41-50 years old	4.65	-	-	-	-	-	-
5 51-60 years old	4.12	(1.382)*	(.882)*	(.985)*	-	-	-
6 61-70 years old	4.50	-	-	-	-	-	-
30. Banks / exchange services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 11-20 years old	5.30	-	-	-	-	-	-
2 21-30 years old	4.80	-	-	-	(.608)*	-	-
3 31-40 years old	4.51	-	-	-	-	-	-
4 41-50 years old	4.19	-	-	-	-	-	-
5 51-60 years old	3.82	(1.476)*	(.972)*	-	-	-	-
6 61-70 years old	4.17	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.2.3 Nationality

T-test analysis was conducted to assess the difference in importance of attributes among Thais and foreigners. Nationality affects most of the attributes (22 of 33). There was a significant difference (t = 4.975, P = .000) in nationalities perception toward the total importance of airport attributes.

Foreigners had higher importance levels over Thais on seat assignments ($\bar{x}$ foreigner = 4.81, $\bar{x}$ Thais = 4.57) and flight information screen ($\bar{x}$ foreigner = 5.29, $\bar{x}$ Thais = 5.09) (Table 4.31). As shown in some interviews of foreign passenger as follows.

"Another thing is about information board especially for foreign travelers. The information should be clearly shown, and airports have to make certain that there is enough board in proper positions. Not only the information board but also information counters with English speaking staff" (P19)

The rest operational attributes that were significantly different depicted that Thai passengers gave higher importance over the foreigners. Attributes significantly rated by Thais higher than rated by foreigners comprised of accessibility ($\bar{x}$ foreigner = 4.81, $\bar{x}$ Thais = 5.04), parking facilities ($\bar{x}$ foreigner = 3.32, $\bar{x}$ Thais = 4.84), stairways/lifts/escalators ($\bar{x}$ foreigner = 4.32, $\bar{x}$ Thais = 4.66), airport staff ($\bar{x}$ foreigner = 4.93, $\bar{x}$ Thais = 5.15), security screening ($\bar{x}$ foreigner = 4.95, $\bar{x}$ Thais = 5.56), check-in counters ($\bar{x}$ foreigner = 5.09, $\bar{x}$ Thais = 5.29), retail shops ($\bar{x}$ foreigner = 3.71, $\bar{x}$ Thais = 4.05). In addition, there was a significant difference in perception toward the importance of departure hall, aerobridges, passenger steps/buses, arrival hall, baggage carts/trolley, tour/hotel services, the availability of car rental services, safety measures, security staff, prayer room, post office and pubic telephone.

4.3.2.4 Marital status

Marital status did not have a significant importance in rating most of the important attributes. However, different marital status influenced the rating of the passenger steps/airfield buses (P = .007) and bank and exchange services (P = .011) (Table 4.32).

Table 4.31 Nationality Comparison on Importance Levels of Operational Attributes

Attributes	Foreigners (n = 129)		Thais (n = 294)		t	df	P-value
	x̄	SD	x̄	SD			
1. Accessibility	4.81	1.261	5.04	.928	2.095	421	.037*
2. Parking facilities	3.32	1.948	4.84	1.173	9.917	421	.000*
3. Seat assignment	4.95	.967	4.57	1.039	2.306	421	.022*
4. Stairway / lifts / escalators	4.32	1.425	4.66	.988	2.844	421	.005*
5. Information desk	4.72	1.293	4.71	1.007	-.116	421	.908
6. Flight information screen	5.29	.987	5.09	1.000	-1.992	421	.047*
7. Broadcasting	4.45	1.380	4.95	.959	4.312	421	.000*
8. Information signs	5.20	1.063	5.22	.883	.196	421	.844
9. Airport staff	4.93	1.001	5.15	.872	2.240	421	.026*
10. Security screening	4.95	1.110	5.56	.771	6.516	421	.000*
11. Check-in counters	5.09	.992	5.29	.820	2.241	421	.026*
12. Baggage check-in	5.16	.900	5.19	.860	.264	421	.792
13. Retail shops	3.71	1.307	4.05	1.068	2.855	421	.005*
14. Restaurant / eating facilities	4.36	1.204	4.16	1.051	-1.694	421	.091
15. Departure hall	4.43	1.158	4.92	.863	4.843	421	.000*
16. Aerobridges	4.60	1.079	4.86	.907	2.593	421	.010*
17. Passenger steps / buses	4.66	1.042	5.00	.857	3.557	421	.000*
18. Arrival hall	4.41	1.101	4.80	.888	3.840	421	.000*
19. Baggage claiming system	4.97	.935	5.00	.867	.331	421	.741
20. Baggage belts (arrival)	4.78	.960	4.95	.903	1.672	421	.095
21. Baggage drop service	4.51	1.112	4.50	1.147	-.069	421	.945
22. Baggage carts / trolley	4.54	1.139	4.83	.930	2.725	421	.007*
23. Tour / hotel services	3.86	1.351	4.16	1.155	2.302	421	.022*
24. Car rental facilities / taxi	3.75	1.479	4.30	1.060	4.282	421	.000*
25. Safety measures	4.96	1.107	5.44	.827	4.909	421	.000*
26. Security staff	5.03	1.045	5.43	.796	4.243	421	.000*
27. Health services	4.84	1.204	5.02	.986	1.672	421	.095
28. Washrooms / toilets	5.46	.791	5.40	.754	-.693	421	.489
29. Prayer room	2.94	1.853	4.25	1.300	8.348	421	.000*
30. Banks / exchange services	4.60	1.332	4.58	1.174	-.118	421	.906
31. Post office	3.08	1.579	4.11	1.135	7.617	421	.000*
32. Public telephone	3.45	1.546	4.24	1.266	5.524	421	.000*
33. Wi-Fi / internet services	5.23	1.222	5.19	1.090	-.324	421	.746
Average Scores	**4.52**	**0.718**	**4.84**	**0.571**	**4.975**	**421**	**.000***

Note: t-test at 0.05 statistical significant level

Table 4.32 Analysis of Variance between Marital Status and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.420	.657
2. Parking facilities	1.177	.309
3. Seat assignment	.354	.702
4. Stairway / lifts / escalators	.351	.704
5. Information desk / counters	.121	.886
6. Flight information screen	1.820	.163
7. Broadcasting / announcement	.318	.728
8. Information signs	2.060	.129
9. Airport staff	.642	.527
10. Security screening	.306	.737
11. Check-in counters	2.517	.082
12. Baggage check-in	2.905	.056
13. Retail shops	.637	.530
14. Restaurant / eating facilities	.293	.746
15. Departure hall	1.850	.159
16. Aerobridges / connecting gate	1.212	.299
17. Passenger steps / airfield buses	5.041	.007*
18. Arrival hall	1.594	.204
19. Baggage claiming system	.925	.397
20. Baggage belts (arrival)	.906	.405
21. Baggage drop service	1.466	.232
22. Baggage carts / trolley	2.264	.105
23. Tour / hotel services	.561	.571
24. Car rental facilities / taxi	.668	.513
25. Safety measures	1.179	.309
26. Security staff	1.003	.368
27. Health services	1.151	.317
28. Washrooms / toilets	.495	.610
29. Prayer room	.046	.955
30. Banks / exchange services	4.570	.011*
31. Post office	1.108	.331
32. Public telephone	2.574	.077
33. Wi-Fi / internet services	.789	.455
Total Importance	**1.213**	**.298**

Note: ANOVA test at 0.05 significant level

Single respondents significantly rated higher importance scores on the passengers' steps/airfield buses ($\bar{x}$ single = 5.01, $\bar{x}$ married = 4.73, and on banks or exchange services ($\bar{x}$ single = 4.73, $\bar{x}$ married = 4.37) over the married couples (Table 4.33).

Table 4.33 Multiple Comparison between Different Marital Status on Importance Scores

Attributes		**Marital Status**		
17. Passenger steps / buses	$\bar{x}$	**1** Single	**2** Married	**3** Divorced
1 Single	5.01	-	(.284)*	-
2 Married	4.73	-	-	-
3 Divorced	4.67	-	-	-
30. Banks / exchange services	$\bar{x}$	**1** Single	**2** Married	**3** Divorced
1 Single	4.73	-	(.361)*	-
2 Married	4.37	-	-	-
3 Divorced	4.33	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.2.5 Religion

Religion is a key factor in rating the importance of attributes. It influences 22 attributes including the accessibility to the airport, parking facilities, announcement, information signs, airport staff, security screening, check-in counters, retail shops, departure and arrival hall, aerobridges, passenger steps/airfield buses, arrival hall, baggage belt, baggage trolley, tour/hotel services, car rental facilities safety measures, security staff, prayer room, post office, public telephone, and Wi-Fi services (Table 4.34).

Some interesting results on Inter-religion comparison were shown. The comparison on accessibility indicated that Sikh rated higher importance scores over Buddhist, Islam, and Christian, respectively (Table 4.35). In terms of security screening and safety measures, Buddhist respondents gave higher importance scores over Christian and irreligious people. There are various results on prayer room's importance scores. Islam had the highest importance score over the Buddhist and Christian whereas the irreligious people did not consider prayer room important as Islam, Brahmans, or Buddhist respondents did.

Table 4.34 Analysis of Variance between Religions and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	5.369	.000*
2. Parking facilities	19.294	.000*
3. Seat assignment	1.888	.082
4. Stairway / lifts / escalators	4.342	.000
5. Information desk / counters	.996	.428
6. Flight information screen	.743	.615
7. Broadcasting / announcement	5.615	.000*
8. Information signs	2.195	.043*
9. Airport staff	3.262	.004*
10. Security screening	5.528	.000*
11. Check-in counters *(Significant differences between groups were not found)*	2.697	.014*
12. Baggage check-in	.396	.881
13. Retail shops	4.549	.000*
14. Restaurant / eating facilities	1.571	.154
15. Departure hall	5.858	.000*
16. Aerobridges / connecting gate	5.100	.000*
17. Passenger steps / airfield buses	5.132	.000*
18. Arrival hall	5.017	.000*
19. Baggage claiming system	2.094	.053
20. Baggage belts (arrival)	2.183	.044*
21. Baggage drop service	1.898	.080
22. Baggage carts / trolley *(Significant differences between groups were not found)*	2.542	.020*
23. Tour / hotel services	3.565	.002*
24. Car rental facilities / taxi	8.396	.000*
25. Safety measures	4.753	.000*
26. Security staff	3.571	.002*
27. Health services	1.451	.206
28. Washrooms / toilets	.714	.639
29. Prayer room	33.445	.000*
30. Banks / exchange services	1.648	.132
31. Post office	13.624	.000*
32. Public telephone	12.166	.000*
33. Wi-Fi / internet services	3.389	.003*
Total Importance	**9.324**	**.000***

Note: F-test at 0.05 significant level

Table 4.35 Multiple Comparison between Different Religions on Importance Scores

Attributes		Religion Groups						
1. Accessibility	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.33	-	-	-	-	-	-	-
2 Buddhism	5.08	-	-	-	-	-	-	-
3 Christianity	4.88	-	-	-	-	-	-	-
4 Islam	4.95	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.06	-	(1.016)*	(.819)*-	(.883)*	-	-	(1.382)*
7 Others	5.44	-	-	-	-	-	-	-
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	6.00	-	-	-	-	-	-	-
2 Buddhism	4.78	-	-	-	-	-	-	-
3 Christianity	3.22	(2.780)*	(1.559)*	-	(1.536)*	-	-	-
4 Islam	4.76	-	-	-	-	-	-	-
5 Sikh	3.00	-	-	-	-	-	-	-
6 Irreligion	2.69	(3.313)*	(2.092)*	-	(2.069)*	-	-	-
7 Others	3.56	-	-	-	-	-	-	-
4. Stairway / lifts / escalators	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.33	-	-	-	-	-	-	-
2 Buddhism	4.67	-	-	-	-	-	-	-
3 Christianity	4.25	-	-	-	-	-	-	-
4 Islam	4.70	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	3.78	-	(.891)*	-	(.921)*	-	-	-
7 Others	4.56	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
7. Broadcasting	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	6.00	-	-	-	-	-	-	-
2 Buddhism	4.95	-	-	(.649)*	-	-	(.672)*	-
3 Christianity	4.31	-	-	-	-	-	-	-
4 Islam	4.95	-	-	-	-	-	-	-
5 Sikh	3.50	-	-	-	-	-	-	-
6 Irreligion	4.28	-	-	-	-	-	-	-
7 Others	4.33	-	-	-	-	-	-	-
8. Information signs	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.33	-	-	-	-	-	-	-
2 Buddhism	5.29	-	-	-	-	-	-	-
3 Christianity	5.19	-	(.414)*	-	(.650)*	-	-	-
4 Islam	4.86	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	4.94	-	-	-	-	-	-	-
7 Others	5.67	-	-	-	-	-	-	-
9. Airport staff	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.67	-	-	-	-	-	-	-
2 Buddhism	5.14	-	-	-	-	-	-	-
3 Christianity	4.73	-	(.414)*	-	(.650)*	-	-	-
4 Islam	5.38	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.78	-	-	-	-	-	-	-
7 Others	5.00	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
10. Security screening	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.67	-	-	-	-	-	-	-
2 Buddhism	5.54	-	-	(.592)*	-	-	(.572)*	-
3 Christianity	4.95	-	-	-	-	-	-	-
4 Islam	5.30	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	4.97	-	-	-	-	-	-	-
7 Others	5.00	-	-	-	-	-	-	-
13. Retail shops	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	4.67	-	-	-	-	-	-	-
2 Buddhism	4.02	-	-	-	-	-	-	-
3 Christianity	3.44	-	-	-	-	-	-	-
4 Islam	4.41	-	-	(.650)*	-	-	-	-
5 Sikh	2.00	-	-	-	-	-	-	-
6 Irreligion	3.75	-	-	-	-	-	-	-
7 Others	4.00	-	-	-	-	-	-	-
15. Departure hall	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.67	-	-	-	-	-	-	-
2 Buddhism	4.89	-	-	-	-	-	-	-
3 Christianity	4.31	-	-	-	-	-	-	-
4 Islam	5.05	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	4.34	-	(.516)*	-	(.710)*	-	-	-
7 Others	4.11	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
16. Aerobridges	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.67	-	-	-	-	-	-	-
2 Buddhism	4.89	-	-	-	-	-	-	-
3 Christianity	4.56	-	-	-	-	-	-	-
4 Islam	4.89	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	4.03	-	(.858)*	-	(.861)*	-	-	-
7 Others	4.78	-	-	-	-	-	-	-
17. Passenger steps / buses	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.67	-	-	-	-	-	-	-
2 Buddhism	5.01	-	-	(.397)*	-	-	-	-
3 Christianity	4.61	-	-	-	-	-	-	-
4 Islam	5.08	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	4.25	-	(.757)*	-	(.831)*	-	-	-
7 Others	4.78	-	-	-	-	-	-	-
18. Arrival hall	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.33	-	-	-	-	-	-	-
2 Buddhism	4.81	-	-	(.418)*	-	-	(.808)*	-
3 Christianity	4.39	-	-	-	-	-	-	-
4 Islam	4.68	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.00	-	-	-	-	-	-	-
7 Others	4.67	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
20. Baggage belts (arrival)	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.33	-	-	-	-	-	-	-
2 Buddhism	4.96	-	-	-	-	-	(.558)*	-
3 Christianity	4.81	-	-	-	-	-	-	-
4 Islam	4.97	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	4.41	-	-	-	-	-	-	-
7 Others	4.67	-	-	-	-	-	-	-
23. Tour / hotel services	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	4.67	-	-	-	-	-	-	-
2 Buddhism	4.14	-	-	-	-	-	-	-
3 Christianity	3.59	-	(.542)*	-	(.920)*	-	-	-
4 Islam	4.51	-	-	-	-	-	-	(.889)*
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	3.63	-	-	-	-	-	-	-
7 Others	4.44	-	-	-	-	-	-	-
24. Car rental facilities / taxi	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.41	-	-	-	-	-	-	-
2 Buddhism	5.17	-	-	-	-	-	-	-
3 Christianity	5.36	-	(.697)*	-	(1.197)*	-	-	-
4 Islam	5.28	-	-	-	-	-	-	-
5 Sikh	5.33	-	-	-	-	-	-	-
6 Irreligion	5.10	-	(1.069)*	-	(1.569)*	-	-	-
7 Others	5.38	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
25. Safety measures	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.33	-	-	-	-	-	-	-
2 Buddhism	5.42	-	-	(.488)*	-	-	-	-
3 Christianity	4.93	-	-	-	-	-	-	-
4 Islam	5.46	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.75	-	(.670)*	-	(.709)*	-	-	-
7 Others	4.89	-	-	-	-	-	-	-
26. Security staff	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.67	-	-	-	-	-	-	-
2 Buddhism	5.39	-	-	-	-	-	-	-
3 Christianity	5.07	-	-	-	-	-	-	-
4 Islam	5.46	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.75	-	(.641)*	-	(.709)*	-	-	-
7 Others	5.33	-	-	-	-	-	-	-
29. Prayer room	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.00	-	-	-	-	-	-	-
2 Buddhism	4.15	-	-	-	-	-	-	-
3 Christianity	2.42	(2.576)*-	(1.722)*	-	-	-	-	-
4 Islam	5.54	-	(1.395)*	(3.117)*	-	-	-	(.2.763)*
5 Sikh	3.00	-	-	-	-	-	-	-
6 Irreligion	2.19	(2.813)*	(1.958)*	-	(3.353)*	-	-	-
7 Others	2.78	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
31. Post office	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	4.00	-	-	-	-	-	-	-
2 Buddhism	4.06	-	-	(1.420)*	-	-	-	-
3 Christianity	2.64	-	-	-	-	-	-	-
4 Islam	4.35	-	-	(1.707)*	-	-	-	(1.574)*
5 Sikh	3.00	-	-	-	-	-	-	-
6 Irreligion	3.25	-	-	(1.047)*	(1.101)*	-	-	-
7 Others	2.78	-	-	-	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	6.00	-	-	(2.915)*	-	-	(2.844)*	(3.111)*
2 Buddhism	4.21	-	-	(1.129)*	-	-	(1.057)*	-
3 Christianity	3.08	-	-	-	(1.564)*	-	-	-
4 Islam	4.65	-	-	-	-	-	-	-
5 Sikh	4.50	-	-	-	-	-	-	-
6 Irreligion	3.16	-	-	-	-	-	-	-
7 Others	2.89	-	-	-	-	-	-	-
33. Wi-Fi / internet services	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	6.00	-	-	-	-	-	-	-
2 Buddhism	5.21	-	-	-	-	-	-	-
3 Christianity	4.73	-	-	-	(.812)*	-	-	-
4 Islam	5.54	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	5.41	-	-	-	-	-	-	-
7 Others	5.89	-	-	-	-	-	-	-

Table 4.35 (Continued)

Attributes		Religion Groups						
Total Importance	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.41	-	-	-	-	-		-
2 Buddhism	5.17	-	-	-	-	-		-
3 Christianity	5.36	-	(.452)*	-	(.561)*	-	-	-
4 Islam	5.28	-	-	-	-	-		-
5 Sikh	5.33	-	-	-	-	-	-	-
6 Irreligion	5.10	(1.137)*	(.571)*	-	(.680)*	-	-	-
7 Others	5.38	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.2.6 Education

Education is an important demographic characteristic in consumer analysis. Education influenced the importance of the airport attributes. It was significant in rating information desk (P = .035), announcement (P =.000), baggage check-in (P = .040), arrival hall (P = .012), prayer room (P = .049), and post office (P = .036) (Table 4.36).

Table 4.36 Analysis of Variance between Education and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.197	.303
2. Parking facilities	2.079	.126
3. Seat assignment	1.325	.267
4. Stairway / lifts / escalators	2.538	.080
5. Information desk / counters	3.378	.035*
6. Flight information screen	1.434	.240
7. Broadcasting / announcement	8.137	.000*
8. Information signs	1.123	.326
9. Airport staff	1.886	.153
10. Security screening	1.429	.241
11. Check-in counters	.833	.435
12. Baggage check-in	3.251	.040*
13. Retail shops	2.003	.136
14. Restaurant / eating facilities	.080	.923
15. Departure hall	.936	.393
16. Aerobridges / connecting gate	2.117	.122
17. Passenger steps / airfield buses	1.627	.198
18. Arrival hall	4.475	.012*
19. Baggage claiming system	.953	.386
20. Baggage belts (arrival)	.721	.487
21. Baggage drop service	2.223	.110
22. Baggage carts / trolley	1.397	.249
23. Tour / hotel services	.988	.373
24. Car rental facilities / taxi	1.363	.257
25. Safety measures	.437	.646
26. Security staff	.467	.627
27. Health services	.153	.858
28. Washrooms / toilets	.344	.709
29. Prayer room *(Significant differences between groups were not found)*	3.029	.049*
30. Banks / exchange services	2.088	.125
31. Post office	3.343	.036*
32. Public telephone	2.101	.124
33. Wi-Fi / internet services	.437	.646
Total Importance *(Significant differences between groups were not found)*	**3.342**	**.036***

Note: ANOVA test at 0.05 significant level

The analysis indicates that respondent with academic level below bachelor degree rated the information desk, broadcasting and arrival hall with higher importance than ones who were educated above bachelor degree (Table 4.37).

Table 4.37 Multiple Comparison between Different Educational Levels on Importance Scores

Attributes		**Educational Levels**		
5. Information desk	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	4.94	-	-	-
2 Bachelor degree	4.74	-	-	-
3 Above bachelor degree	4.53	(.418)*	-	-
7. Broadcasting	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	5.11	-	-	-
2 Bachelor degree	4.87	-	-	-
3 Above bachelor degree	4.48	(.631)*	(.384)*	-
12. Baggage check-in	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	5.14	-	-	-
2 Bachelor degree	5.27	-	-	-
3 Above bachelor degree	5.03	-	(.245)*	-
18. Arrival hall	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	4.90	-	-	-
2 Bachelor degree	4.72	-	-	-
3 Above bachelor degree	4.48	(.417)*	-	-
31. Post office	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	3.93	-	-	-
2 Bachelor degree	3.90	-	-	-
3 Above bachelor degree	3.53	-	(.372)*	-

Note: F-test (mean differences) at 0.05 significant level

4.3.2.7 Occupation

ANOVA test (F=0.05) did not reveal any attribute that is influenced by the occupation of the respondent (Table 4.38). The study focused on nine categories of employment that included civil servants, business owners, private business employees, housewife, student, freelance/temporary worker, retired and unemployed. Majority of the respondents were private business employees (42.8%) while the unemployed constituted 1.2%.

Table 4.38 Analysis of Variance between Occupation and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.997	.433
2. Parking facilities	1.927	.064
3. Seat assignment	1.324	.237
4. Stairway / lifts / escalators	1.662	.117
5. Information desk / counters	1.019	.417
6. Flight information screen	.595	.760
7. Broadcasting / announcement	.748	.631
8. Information signs	1.296	.251
9. Airport staff	.816	.574
10. Security screening *(Significant differences between groups were not found)*	2.066	.046*
11. Check-in counters	.817	.574
12. Baggage check-in	1.621	.128
13. Retail shops	.982	.444
14. Restaurant / eating facilities	1.033	.407
15. Departure hall	1.242	.279
16. Aerobridges / connecting gate	.958	.462
17. Passenger steps / airfield buses	1.985	.056
18. Arrival hall	.552	.795
19. Baggage claiming system	1.332	.234
20. Baggage belts (arrival)	.879	.523
21. Baggage drop service	1.217	.292
22. Baggage carts / trolley *(Significant differences between groups were not found)*	2.040	.049*
23. Tour / hotel services *(Significant differences between groups were not found)*	2.379	.021*
24. Car rental facilities / taxi	1.611	.130
25. Safety measures	1.079	.376
26. Security staff	2.510	.015*
27. Health services	2.425	.019*
28. Washrooms / toilets	1.153	.329
29. Prayer room	1.519	.159
30. Banks / exchange services	.924	.487
31. Post office	1.141	.336
32. Public telephone	2.824	.007*
33. Wi-Fi / internet services	1.437	.189
Total Importance	**1.555**	**.147**

Note: ANOVA test at 0.05 significant level

However, there was a noteworthy difference between groups in attributes such as security staff, health services and public telephone. Civil servants, housewife, and temporary workers concerned on security staff more than did the retired. Surprisingly, civil servants and housewife did concern on health services more than the retired persons did too. Temporary workers gave importance scores to public telephone higher than the civil servants (Table 4.39).

Table 4.39 Multiple Comparison between Different Occupation on Importance Scores

Attributes		Occupation							
26. Security staff	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	5.42	-	-	-	-	-	-	-	-
2 Business owner	5.33	-	-	-	-	-	-	-	-
3 Private business employee	5.28	-	-	-	-	-	-	-	-
4 Housewife	6.00	-	-	-	-	-	-	-	-
5 Student	5.12	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	5.43	-	-	-	-	-	-	-	-
7 Retired	4.40	(1.015)*	-	-	(1.600)*	-	(1.033)*	-	-
8 Unemployed	5.40	-	-	-	-	-	-	-	-
27. Health services	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	5.07	-	-	-	-	-	-	-	-
2 Business owner	5.04	-	-	-	-	-	-	-	-
3 Private business employee	4.90	-	-	-	-	-	-	-	-
4 Housewife	5.40	-	-	-	-	-	-	-	-
5 Student	4.85	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	5.30	-	-	-	-	-	-	-	-
7 Retired	3.90	(1.166)*	(1.138)*	-	-	-	-	-	-
8 Unemployed	5.20	-	-	-	-	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	4.28	-	-	-	-	-	-	-	-
2 Business owner	3.81	-	-	-	-	-	-	-	-
3 Private business employee	3.97	-	-	-	-	-	-	-	-
4 Housewife	4.20	-	-	-	-	-	-	-	-
5 Student	4.44	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	3.30	(.983)*	-	-	-	(1.141)*	-	-	-
7 Retired	3.30	-	-	-	-	-	-	-	-
8 Unemployed	3.60	-	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.2.8 Income

The analysis of the variance between income and importance levels on airport operational attributes indicates that income level significantly affects the rating of several attributes such as parking facilities, stairway / lifts / escalators, information desk / counters, broadcasting / announcement, security screening, retail shops, departure hall, arrival hall, baggage carts / trolley, tour / hotel services, car rental facilities / taxi, safety measures, health services, prayer room, post office, and public telephone (Table 4.40).

Table 4.40 Analysis of Variance between Income and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.842	.521
2. Parking facilities	20.022	.000*
3. Seat assignment	2.229	.051
4. Stairway / lifts / escalators	3.816	.002*
5. Information desk / counters	2.340	.042*
6. Flight information screen	1.992	.079
7. Broadcasting / announcement	7.266	.000*
8. Information signs	1.351	.243
9. Airport staff	1.732	.127
10. Security screening	4.638	.000*
11. Check-in counters	1.649	.147
12. Baggage check-in	.681	.638
13. Retail shops	4.712	.000*
14. Restaurant / eating facilities	.706	.619
15. Departure hall	6.026	.000*
16. Aerobridges / connecting gate	2.025	.075
17. Passenger steps / airfield buses	1.851	.103
18. Arrival hall	3.416	.005*
19. Baggage claiming system	1.229	.295
20. Baggage belts (arrival)	2.194	.055
21. Baggage drop service	1.423	.216
22. Baggage carts / trolley	3.905	.002*
23. Tour / hotel services	3.960	.002*
24. Car rental facilities *(Significant differences between groups were not found)*	5.781	.000*
25. Safety measures *(Significant differences between groups were not found)*	3.058	.010*
26. Security staff	1.718	.130
27. Health services	2.685	.021*
28. Washrooms / toilets	.688	.633
29. Prayer room	18.029	.000*
30. Banks / exchange services	2.042	.072
31. Post office	17.104	.000*
32. Public telephone	10.635	.000*
33. Wi-Fi / internet services	.751	.586
Total Importance	**8.483**	**.000***

Note: ANOVA test at 0.05 significant level

Multiple comparisons indicated that low income passengers tended to rate higher importance levels over the high income passengers for overall significant attributes. For instance, respondents who had monthly income more than 100,000 THB rated most attributes (e.g., parking facilities, escalators, security screening, or retail shops) as lower important than respondents who earned less than 20,001 THB (Table 4.41).

Table 4.41 Multiple Comparison between Income Groups on Importance Scores

Attributes		Income Groups					
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.82	-	-	-	-	-	
2 20,001-40,000 THB	4.76	-	-	-	-	-	
3 40,001-60,000 THB	4.59	-	-	-	-	-	
4 60,001-80,000 THB	4.46	-	-	-	-	-	
5 80,001-100,000 THB	4.57	-	-	-	-	-	
6 More than 100,000 THB	2.65	(2.172)*	(2.110)*	(1.937)*	(1.813)*	(1.923)*	-
4. Stairway / lifts / escalators	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.78	-	-	-	-	-	-
2 20,001-40,000 THB	4.66	-	-	-	-	-	-
3 40,001-60,000 THB	4.39	-	-	-	-	-	-
4 60,001-80,000 THB	4.31	-	-	-	-	-	-
5 80,001-100,000 THB	4.90	-	-	-	-	-	-
6 More than 100,000 THB	4.07	(.708)*	(.587)*	-	-	(.831)*	-
5. Information desk	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.76	-	-	-	-	-	-
2 20,001-40,000 THB	4.71	-	-	-	-	-	-
3 40,001-60,000 THB	4.73	-	-	-	-	-	-
4 60,001-80,000 THB	4.31	-	-	-	-	-	-
5 80,001-100,000 THB	5.19	-	-	-	-	-	-
6 More than 100,000 THB	4.37	-	-	-	-	(.820)*	-
7. Broadcasting	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	5.14	-	-	-	(.987)*	(.808)	(.956)*
2 20,001-40,000 THB	4.90	-	-	-	-	-	-
3 40,001-60,000 THB	4.88	-	-	-	-	-	-
4 60,001-80,000 THB	4.15	-	-	-	-	-	-
5 80,001-100,000 THB	4.33	-	-	-	-	-	-
6 More than 100,000 THB	4.19	-	(.718)*	(.693)*	-	-	-

Table 4.41 (Continued)

Attributes		Income Groups					
10. Security screening	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	5.64	-	-	-	-	-	-
2 20,001-40,000 THB	5.54	-	-	-	-	-	-
3 40,001-60,000 THB	5.46	-	-	-	-	-	-
4 60,001-80,000 THB	5.15	-	-	-	-	-	-
5 80,001-100,000 THB	5.10	-	-	-	-	-	-
6 More than 100,000 THB	5.02	(.623)*	(.522)*	-	-	-	-
13. Retail shops	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.27	-	-	-	-	(.888)*	(.806)*
2 20,001-40,000 THB	3.95	-	-	-	-	-	-
3 40,001-60,000 THB	4.05	-	-	-	-	-	-
4 60,001-80,000 THB	4.08	-	-	-	-	-	-
5 80,001-100,000 THB	3.38	-	-	-	-	-	-
6 More than 100,000 THB	3.46	-	-	-	-	-	-
15. Departure hall	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.78	-	-	-	-	-	-
2 20,001-40,000 THB	4.92	-	-	-	-	-	-
3 40,001-60,000 THB	4.95	-	-	-	-	-	-
4 60,001-80,000 THB	4.54	-	-	-	-	-	-
5 80,001-100,000 THB	5.00	-	-	-	-	-	-
6 More than 100,000 THB	4.15	(.634)*	(.771)*	(.803)*	-	-	-
18. Arrival hall	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.91	-	-	-	-	-	-
2 20,001-40,000 THB	4.66	-	-	-	-	-	-
3 40,001-60,000 THB	4.63	-	-	-	-	-	-
4 60,001-80,000 THB	4.38	-	-	-	-	-	-
5 80,001-100,000 THB	4.95	-	-	-	-	-	-
6 More than 100,000 THB	4.28	(.632)*	-	-	-	-	-
22. Baggage carts / trolley	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.79	-	-	-	-	-	-
2 20,001-40,000 THB	4.82	-	-	-	-	-	-
3 40,001-60,000 THB	4.76	-	-	-	-	-	-
4 60,001-80,000 THB	4.54	-	-	-	-	-	-
5 80,001-100,000 THB	5.05	-	-	-	-	-	-
6 More than 100,000 THB	4.19	(.610)*	(.637)*	-	-	(.862)*	-

Table 4.41 (Continued)

Attributes		Income Groups					
23. Tour / hotel services	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.31	-	-	-	-	-	-
2 20,001-40,000 THB	4.12	-	-	-	-	-	-
3 40,001-60,000 THB	4.17	-	-	-	-	-	-
4 60,001-80,000 THB	3.62	-	-	-	-	-	-
5 80,001-100,000 THB	3.62	-	-	-	-	-	-
6 More than 100,000 THB	3.54	(.771)*	(.584)*	-	-	-	-
27. Health services	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	5.08	-	-	-	-	-	-
2 20,001-40,000 THB	5.02	-	-	-	-	-	-
3 40,001-60,000 THB	5.05	-	-	-	-	-	-
4 60,001-80,000 THB	4.31	-	-	-	-	-	-
5 80,001-100,000 THB	5.10	-	-	-	-	-	-
6 More than 100,000 THB	4.59	(1.640)*	(1.970)*	-	-	-	-
29. Prayer room	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.37	-	-	-	-	-	-
2 20,001-40,000 THB	4.27	-	-	-	-	-	-
3 40,001-60,000 THB	3.83	-	-	-	-	-	-
4 60,001-80,000 THB	4.00	-	-	-	-	-	-
5 80,001-100,000 THB	3.24	-	(1.028)*	-	-	-	-
6 More than 100,000 THB	2.30	(2.075)*	(1.970)*	(1.533)*	(1.704)*	(2.075)*	-
31. Post office	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.40	-	-	-	-	-	-
2 20,001-40,000 THB	4.09	-	-	-	-	-	-
3 40,001-60,000 THB	3.78	-	-	-	-	-	-
4 60,001-80,000 THB	3.69	-	-	-	-	-	-
5 80,001-100,000 THB	3.62	-	-	-	-	-	-
6 More than 100,000 THB	2.54	(1.860)*	(1.552)*	(1.243)*	(1.155)*	(1.082)*	-
32. Public telephone	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.56	-	-	-	-	-	-
2 20,001-40,000 THB	4.23	-	-	-	-	-	-
3 40,001-60,000 THB	3.90	-	-	-	-	-	-
4 60,001-80,000 THB	3.77	-	-	-	-	-	-
5 80,001-100,000 THB	3.71	-	-	-	-	-	-
6 More than 100,000 THB	3.00	(1.564)*	(1.234)*	(.902)*	-	-	-

Table 4.41 (Continued)

Attributes		Income Groups					
Total Importance	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.94	-	-	-	-	-	-
2 20,001-40,000 THB	4.81	-	-	-	-	-	-
3 40,001-60,000 THB	4.74	-	-	-	-	-	-
4 60,001-80,000 THB	4.55	-	-	-	-	-	-
5 80,001-100,000 THB	4.78	-	-	-	-	-	-
6 More than 100,000 THB	4.31	(.637)*	(.499)*	(.434)*	-	(.476)*	-

Note: F-test (mean differences) at 0.05 significant level

4.3.3 What Significant Variables of Passengers' Travel Experiences Show Different Levels of Importance for Thailand Airports' Operational Attributes? (RQ6)

Passengers' travel experience was examined on four main areas including experience on the site, accompanying groups, experience of air transport and experience of airports. The experience on the site included three proxies (main purpose of the trip, times the province was visited per year, and the transport used to get to the province). The average importance indicates that there was a significant difference on the times the province was visited per year (P = .000). The other experiences did not have significance on overall importance scores. However, other related variables named accompanying groups, experience of air transport, and experience of airports showed some significant results on specific operational attributes (Table 4.42).

Some variables were influenced across the entire respondent experience. For example, a parking facility was a major issue through the travel experience. The information desk, flight information screen, broadcasting, departure hall, the general baggage handling process, prayer room, public telephone and post are significant in most of the experiences. In addition, the health services, Wi-Fi services, the security staff, eating facilities, airport staff, and information signs were not impacted by any of respondents' experience.

Table 4.42 Overall Statistical Testing Results on Travel Experiences' Variables to Importance Levels of Airport Operational Attributes

Attributes / Variables	Experiences on-site*			Accompanying groups*			Experience of air transport*			Experience of airports*			
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Accessibility to the airport	.132	.067	.057	.484	.223	.782	.119	.142	.439	.377	.376	.909	.225
2. Parking facilities	.001*	.000*	.270	.004*	.022	.601	.041	.034*	.003	.000*	.000*	.434	.079
3. Seat assignment & waiting area	.320	.045	.203	.583	.284	.615	.046	.887	.010*	.045*	.397	.978	.089
4. Stairway / lifts / escalators	.284	.632	.426	.532	.157	.503	.056	.025*	.243	.819	.606	.639	.830
5. Information desk / counters	.683	.637	.002*	.612	.040*	.130	.122	.888	.079	.862	.712	.302	.853
6. Flight information screen	.892	.044*	.259	.076	.000*	.254	.374	.219	.065	.206	.160	.531	.046
7. Broadcasting / announcement	.512	.000*	.003	.198	.046*	.369	.228	.242	.254	.477	.735	.639	.751
8. Information signs	.786	.871	.468	.575	.244	.500	.331	.510	.348	.729	.667	.881	.256
9. Airport staff	.553	.050	.135	.223	.171	.482	.836	.914	.399	.990	.631	.333	.355
10. Security screening	.558	.017	.739	.145	.455	.785	.938	.842	.073	.685	.544	.787	.894
11. Check-in counters	.609	.354	.055	.176	.759	.720	.255	.849	.659	.158	.382	.869	.451
12. Baggage check-in	.672	.600	.031	.093	.685	.752	.874	.442	.908	.725	.691	.613	.643
13. Retail shops	.473	.224	.201	.733	.975	.040*	.397	.346	.515	.430	.327	.685	.895
14. Restaurant / eating facilities	.799	.913	.423	.155	.399	.368	.654	.365	.636	.403	.487	.427	.805
15. Departure hall	.001	.000*	.208	.123	.575	.171	.213	.487	.135	.090	.180	.505	.740
16. Aerobridges / connecting gate	.214	.085	.111	.144	.245	.782	.039	.108	.358	.084	.082	.866	.309
17. Passenger steps / airfield buses	.203	.000*	.119	.222	.233	.921	.593	.715	.891	.271	.116	.161	.075
18. Arrival hall	.114	.027	.111	.343	.142	.089	.205	.150	.342	.345	.578	.694	.118
19. Baggage claiming system	.585	.242	.117	.057	.011*	.317	.041	.071	.157	.323	.131	.263	.470
20. Baggage belts (arrival)	.366	.106	.028	.188	.021*	.211	.256	.097	.266	.505	.356	.369	.332
21. Baggage drop service	.306	.790	.027*	.506	.336	.002	.121	.471	.901	.619	.282	.059	.216

Table 4.42 (Continued)

Attributes / Variables	Experiences on-site*			Accompanying groups*			Experience of air transport*			Experience of airports*			
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
22. Baggage carts / trolley	.212	.046	.134	.014*	.188	.969	.349	.141	.007*	.075	.295	.050	.655
23. Tour / hotel services	.723	.737	.244	.727	.615	.000*	.476	.451	.306	.633	.677	.086	.104
24. Car rental facilities / taxi	.626	.017	.461	.980	.869	.507	.026*	.146	.523	.311	.371	.610	.166
25. Safety measures	.493	.009*	.518	.555	.023*	.379	.279	.066	.415	.372	.519	.913	.452
26. Security staff	.901	.164	.212	.683	.267	.694	.211	.158	.176	.250	.182	.963	.322
27. Health services	.906	.141	.206	.688	.476	.662	.071	.352	.218	.894	.655	.377	.192
28. Washrooms / toilets	.609	.283	.483	.021*	.072	.018*	.665	.224	.006*	.030	.034*	.041	.669
29. Prayer room	.009*	.000*	.188	.042*	.054	.390	.183	.000*	.027	.001*	.004*	.406	.036
30. Banks / exchange services	.311	1.000	.043	.236	.335	.500	.650	.148	.592	.833	.261	.702	.338
31. Post office	.138	.000*	.115	.009*	.004*	.275	.060	.013*	.064	.019*	.008*	.983	.123
32. Public telephone	.099	.000*	.012*	.000*	.006*	.455	.576	.113	.656	.285	.010*	.569	.085
33. Wi-Fi / internet services	.795	.492	.303	.077	.265	.134	.500	.246	.723	.945	.633	.052	.687
Average Importance	**.373**	**.000***	**.096**	**.498**	**.054**	**.348**	**.081**	**.281**	**.357**	**.443**	**.243**	**.662**	**.214**
Number of significant attributes	**2**	**9**	**4**	**6**	**8**	**3**	**1**	**3**	**3**	**4**	**5**	**0**	**0**

Note: 1 = Main purpose of the trip; 2 = Times the province was visited per year; 3 = Transport used to get to the province; 4 = Accompanying people; 5 = Number of accompanying people; 6 = Travel arrangements; 7 = Reasons of choosing LCC; 8 = Most frequently used airlines; 9 = Experience of domestic LCC flight per year; 10 = Numbers of arrivals and departures at the airport; 11 = Numbers of times flying with LCC at the airport; 12 = Average time used on departure; 13 = Average time used on arrival

4.3.3.1 Experiences on-site

1) Main purpose of the trip

Out of the 33 items in the questionnaire, the main purpose of the trip influenced three variables: parking facilities, the departure hall, and prayer room (Table 4.43).

Table 4.43 Analysis of Variance between Main Purpose of the Trip and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.704	.132
2. Parking facilities	4.303	.001*
3. Seat assignment	1.175	.320
4. Stairway / lifts / escalators	1.251	.284
5. Information desk / counters	.622	.683
6. Flight information screen	.335	.892
7. Broadcasting / announcement	.854	.512
8. Information signs	.486	.786
9. Airport staff	.796	.553
10. Security screening	.789	.558
11. Check-in counters	.720	.609
12. Baggage check-in	.637	.672
13. Retail shops	.911	.473
14. Restaurant / eating facilities	.470	.799
15. Departure hall *(Significant differences between groups were not found)*	4.137	.001*
16. Aerobridges / connecting gate	1.426	.214
17. Passenger steps / airfield buses	1.455	.203
18. Arrival hall	1.787	.114
19. Baggage claiming system	.751	.585
20. Baggage belts (arrival)	1.088	.366
21. Baggage drop service	1.204	.306
22. Baggage carts / trolley	1.430	.212
23. Tour / hotel services	.571	.723
24. Car rental facilities / taxi	.697	.626
25. Safety measures	.882	.493
26. Security staff	.319	.901
27. Health services	.311	.906
28. Washrooms / toilets	.720	.609
29. Prayer room	3.116	.009*
30. Banks / exchange services	1.195	.311
31. Post office	1.680	.138
32. Public telephone	1.868	.099
33. Wi-Fi / internet services	.475	.795
Total Importance	**1.076**	**.373**

Note: ANOVA test at 0.05 significant level

Respondents travelling for MICE were greatly concerned about the parking facilities ($\bar{x}$ difference = 0.863) and the prayer room ($\bar{x}$ difference = 0.794) over the leisure travellers (Table 4.44). The purpose of the visit does not seem to influence the rating of the departure hall.

Table 4.44 Multiple Comparison between Main Purposes on Importance Scores

Attributes				**Main Purposes**			
2. Parking facilities	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Leisure	4.11	-	-	-	(.863)*	-	-
2 VFR	4.64	-	-	-	-	-	-
3 Business	4.54	-	-	-	-	-	-
4 MICE	4.80	-	-	-	-	-	-
5 Education	4.98	-	-	-	-	-	-
6 Others	5.67	-	-	-	-	-	-
29. Prayer room	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 Leisure	3.64	-	-	-	(.794)*	-	-
2 VFR	4.73	-	-	-	-	-	-
3 Business	3.94	-	-	-	-	-	-
4 MICE	4.09	-	-	-	-	-	-
5 Education	4.43	-	-	-	-	-	-
6 Others	4.33	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

2) Times the province was visited per year

As indicated earlier, the times the province was visited refers to the time respondent visited the Phuket International airport, Hat Yai International airport, Chaing Mai International airport and Mae Fah Luang Chiang Rai International airport. Majority of the respondent (80%) had annually visited the province. These visits had a significant influence on numerous attributes including the parking facilities, seat assignment, flight information screen, broadcasting, security screening, departure hall, passenger steps/airfield buses, baggage carts/trolley, car rental facilities, prayer room, post office, public telephone, and total importance (Table 4.45).

Table 4.45 Analysis of Variance between Times Visiting the Provinces and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.985	.067
2. Parking facilities	12.281	.000*
3. Seat assignment *(Significant differences between groups were not found)*	2.169	.045*
4. Stairway / lifts / escalators	.722	.632
5. Information desk / counters	.716	.637
6. Flight information screen	2.176	.044*
7. Broadcasting / announcement	4.695	.000*
8. Information signs	.412	.871
9. Airport staff	2.123	.050
10. Security screening	2.624	.017*
11. Check-in counters	1.113	.354
12. Baggage check-in	.763	.600
13. Retail shops	1.374	.224
14. Restaurant / eating facilities	.344	.913
15. Departure hall	4.434	.000*
16. Aerobridges / connecting gate	1.870	.085
17. Passenger steps / airfield buses	4.396	.000*
18. Arrival hall *(Significant differences between groups were not found)*	2.404	.027*
19. Baggage claiming system	1.331	.242
20. Baggage belts (arrival)	1.759	.106
21. Baggage drop service	.524	.790
22. Baggage carts / trolley *(Significant differences between groups were not found)*	2.161	.046*
23. Tour / hotel services	.592	.737
24. Car rental facilities *(Significant differences between groups were not found)*	2.615	.017*
25. Safety measures	2.886	.009*
26. Security staff	1.538	.164
27. Health services	1.617	.141
28. Washrooms / toilets	1.243	.283
29. Prayer room	7.851	.000*
30. Banks / exchange services	.037	1.000
31. Post office	8.809	.000*
32. Public telephone	5.161	.000*
33. Wi-Fi / internet services	.904	.492
Total Importance	**4.251**	**.000***

Note: ANOVA test at 0.05 significant level

It is evident that respondents were keen on the arrival and departure processes, particularly the handling of their baggage, the availability of information (broadcasting) and transport to and from the airport (car rental services and airfield buses). The time of the visit also has significant effects on the importance of public telephone and post offices. These variables relate to the availability of information.

The overall results of multiple comparisons indicated that the first-time visitors gave importance levels on total importance scores and most significant attributes lower than those who had experienced visiting the provinces where airports were situated, significantly (Table 4.46). The attributes that showed such the different results included parking facilities, broadcasting, announcement, departure hall, passenger steps/buses, safety measures, prayer room, post office, and public telephone.

Table 4.46 Multiple Comparison between Times Visiting the Provinces on Importance Scores

Attributes		**Times Visiting the Provinces**						
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.28	-	(1.097)*	(1.317)*	(1.402)*	(1.889)*	(1.722)*	(1.772)*
2 1-2 times / year	4.38	-	-	-	-	-	-	-
3 3-4 times / year	4.59	-	-	-	-	-	-	-
4 5-6 times / year	4.68	-	-	-	-	-	-	-
5 7-8 times / year	5.17	-	-	-	-	-	-	-
6 9-10 times / year	5.00	-	-	-	-	-	-	-
7 More than 10 times / year	5.05	-	-	-	-	-	-	-
6.Flight information screen	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	5.28	-	-	-	-	-	-	-
2 1-2 times / year	5.08	-	-	-	-	-	-	-
3 3-4 times / year	5.20	-	-	-	-	-	-	-
4 5-6 times / year	5.00	-	-	-	-	-	-	-
5 7-8 times / year	5.92	-	-	-	-	-	-	(.954)*
6 9-10 times / year	5.25	-	-	-	-	-	-	-
7 More than 10 times / year	4.96	-	-	-	-	-	-	-
7. Broadcasting	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	4.32	-	(.486)*	(.551)*	(.878)*	(1.178)*	-	(.653)*
2 1-2 times / year	4.81	-	-	-	-	-	-	-
3 3-4 times / year	4.87	-	-	-	-	-	-	-
4 5-6 times / year	5.20	-	-	-	-	-	-	-
5 7-8 times / year	5.50	-	-	-	-	-	-	-
6 9-10 times / year	5.00	-	-	-	-	-	-	-
7 More than 10 times / year	4.98	-	-	-	-	-	-	-
15. Departure hall	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	4.46	-	-	-	-	-	(.919)*	(.557)*
2 1-2 times / year	4.69	-	-	-	-	-	-	-
3 3-4 times / year	4.73	-	-	-	-	-	-	-
4 5-6 times / year	4.92	-	-	-	-	-	-	-
5 7-8 times / year	5.33	-	-	-	-	-	-	-
6 9-10 times / year	5.38	-	-	-	-	-	-	-
7 More than 10 times / year	5.01	-	-	-	-	-	-	-

Table 4.46 (Continued)

Attributes	Times Visiting the Provinces							
17. Passenger steps / buses	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	4.53	-	-	(.568)*	-	(.883)*	-	(.467)*
2 1-2 times / year	4.84	-	-	-	-	-	-	-
3 3-4 times / year	5.10	-	-	-	-	-	-	-
4 5-6 times / year	5.12	-	-	-	-	-	-	-
5 7-8 times / year	5.42	-	-	-	-	-	-	-
6 9-10 times / year	5.13	-	-	-	-	-	-	-
7 More than 10 times / year	5.00	-	-	-	-	-	-	-
25. Safety measures	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	4.99	-	-	-	-	(.928)*	-	-
2 1-2 times / year	5.33	-	-	-	-	-	-	-
3 3-4 times / year	5.34	-	-	-	-	-	-	-
4 5-6 times / year	5.40	-	-	-	-	-	-	-
5 7-8 times / year	5.92	-	-	-	-	-	-	-
6 9-10 times / year	5.56	-	-	-	-	-	-	-
7 More than 10 times / year	5.36	-	-	-	-	-	-	-
29. Prayer room	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.00	-	(.850)*	(.886)*	(1.720)*	(1.583)*	(1.500)*	(1.259)*
2 1-2 times / year	3.85	-	-	-	-	-	-	-
3 3-4 times / year	3.89	-	-	-	-	-	-	-
4 5-6 times / year	4.72	-	-	-	-	-	-	-
5 7-8 times / year	4.58	-	-	-	-	-	-	-
6 9-10 times / year	4.50	-	-	-	-	-	-	-
7 More than 10 times / year	4.26	-	-	-	-	-	-	-
31. Post office	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	2.94	-	(.964)*	(1.030)*	(1.416)*	(1.139)*	(1.368)*	(1.142)*
2 1-2 times / year	3.91	-	-	-	-	-	-	-
3 3-4 times / year	3.97	-	-	-	-	-	-	-
4 5-6 times / year	4.36	-	-	-	-	-	-	-
5 7-8 times / year	4.08	-	-	-	-	-	-	-
6 9-10 times / year	4.31	-	-	-	-	-	-	-
7 More than 10 times / year	4.09	-	-	-	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.33	-	(.692)*	(1.008)*	(1.107)*	-	-	(.840)*
2 1-2 times / year	4.03	-	-	-	-	-	-	-
3 3-4 times / year	4.34	-	-	-	-	-	-	-
4 5-6 times / year	4.44	-	-	-	-	-	-	-
5 7-8 times / year	4.08	-	-	-	-	-	-	-
6 9-10 times / year	4.25	-	-	-	-	-	-	-
7 More than 10 times / year	4.17	-	-	-	-	-	-	-
Total Importance	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.73	-	-	(.313)*	(.448)*	(.649)*	-	(.339)*
2 1-2 times / year	4.18	-	-	-	-	-	-	-
3 3-4 times / year	4.25	-	-	-	-	-	-	-
4 5-6 times / year	4.48	-	-	-	-	-	-	-
5 7-8 times / year	4.67	-	-	-	-	-	-	-
6 9-10 times / year	4.38	-	-	-	-	-	-	-
7 More than 10 times / year	4.15	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Transport used to get to the province

The mean of transport used to access the airport is crucial experience that can influence the attitude of the respondent toward other variables. The transported used to get to the province is not statistically significant at the total importance. However, it influences the rating of some variables (Table 4.47). Different transport modes showed significant differences on seven attributes: information desk/counters, broadcasting/announcement, baggage check-in, baggage belts, baggage drop service, banks/exchange services, and public telephone. The analysis does not indicate a significant relationship between the means of transport and variables such as the accessibility to the airport, the parking facilities, escalators, or the waiting areas.

Passengers who regularly used low-cost airlines over the other modes tended to have importance mean scores on information desk, baggage drop services, and public telephone lower than those who used other modes of transport (i.e., train, rental car, public bus, full-service airlines, or private car). For instance, ones who usually visit the provinces by public bus rated baggage drop services as higher importance than what rated by ones who usually use the low-cost airlines (Table 4.48).

Table 4.47 Analysis of Variance between Normally Used Transport and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	2.173	.057
2. Parking facilities	1.284	.270
3. Seat assignment	1.459	.203
4. Stairway / lifts / escalators	.987	.426
5. Information desk / counters	3.832	.002*
6. Flight information screen	1.311	.259
7. Broadcasting *(Significant differences between groups were not found)*	3.741	.003*
8. Information signs	.919	.468
9. Airport staff	1.695	.135
10. Security screening	.549	.739
11. Check-in counters	2.195	.055
12. Baggage check-in *(Significant differences between groups were not found)*	2.490	.031*
13. Retail shops	1.464	.201
14. Restaurant / eating facilities	.991	.423
15. Departure hall	1.444	.208
16. Aerobridges / connecting gate	1.808	.111
17. Passenger steps / airfield buses	1.767	.119

Table 4.47 (Continued)

Attributes	F	P-value
18. Arrival hall	1.805	.111
19. Baggage claiming system	1.778	.117
20. Baggage belts (arrival) *(Significant differences between groups were not found)*	2.548	.028*
21. Baggage drop service	2.572	.027*
22. Baggage carts / trolley	1.701	.134
23. Tour / hotel services	1.348	.244
24. Car rental facilities / taxi	.931	.461
25. Safety measures	.846	.518
26. Security staff	1.433	.212
27. Health services	1.451	.206
28. Washrooms / toilets	.897	.483
29. Prayer room	1.505	.188
30. Banks / exchange *(Significant differences between groups were not found)*	2.316	.043*
31. Post office	1.785	.115
32. Public telephone	2.991	.012*
33. Wi-Fi / internet services	1.211	.303
Total Importance	**1.890**	**.096**

Note: ANOVA test at 0.05 significant level

Table 4.48 Multiple Comparison between Transportation Groups on Importance Scores

Attributes		Transportation					
5. Information desk	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 Train	4.91	-	-	-	-	-	-
2 Rental car	6.00	-	-	-	-	-	-
3 Public bus	5.05	-	-	-	-	-	-
4 Full-service carrier	4.85	-	-	-	-	-	-
5 Low-cost carrier	4.58	-	(1.423)*	-	-	-	-
6 Private car	4.77	-	-	-	-	-	-
21. Baggage drop service	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 Train	4.55	-	-	-		-	-
2 Rental car	5.14	-	-	-	-	-	-
3 Public bus	4.95	-	-	-	-	-	-
4 Full-service carrier	4.67	-	-	-	-	-	-
5 Low-cost carrier	4.37	-	-	(.583)*	-	-	-
6 Private car	4.54	-	-	-	-	-	-
32.Public telephone	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 Train	4.64	-	-	-	-	-	-
2 Rental car	3.71	-	-	-	-	-	-
3 Public bus	4.70	-	-	-	-	-	-
4 Full-service carrier	4.15	-	-	-	-	-	-
5 Low-cost carrier	3.99	-	-	(.716)*	-	-	-
6 Private car	4.35	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.3.2 Accompanying groups

1) Accompanying people

Another important experience is the accompanying persons. During most travels, travelers are accompanied by another person. According the study, 35.9% of the travelers we alone while 64.1% travelled with a friend, colleague or spouse. The person accompanying did not have a significant influence on the importance rating of the overall attributes. However, elemental analysis indicates that the accompanying person had influence on the rating of the parking facilities, baggage trolley, washrooms, and prayer room (Table 4.49). Out of the 33 items considered, the accompanying person influenced four variables (12%).

Family travelling passengers indicated the importance of parking facilities, baggage carts/trolley, washrooms/toilets, and public telephone higher than some other groups in different ways (Table 4.50). For examples, parking facilities were seen to be more important for family group over the spouse or washroom/toilets were seen to be more important compared to the views of ones who travel alone.

Table 4.49 Analysis of Variance between Accompanying People and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.818	.484
2. Parking facilities	4.473	.004*
3. Seat assignment	.651	.583
4. Stairway / lifts / escalators	.735	.532
5. Information desk / counters	.605	.612
6. Flight information screen	2.311	.076
7. Broadcasting / announcement	1.561	.198
8. Information signs	.664	.575
9. Airport staff	1.467	.223
10. Security screening	1.810	.145
11. Check-in counters	1.657	.176
12. Baggage check-in	2.156	.093
13. Retail shops	.428	.733
14. Restaurant / eating facilities	1.754	.155
15. Departure hall	1.934	.123
16. Aerobridges / connecting gate	1.815	.144
17. Passenger steps / airfield buses	1.472	.222
18. Arrival hall	1.115	.343
19. Baggage claiming system	2.523	.057

Table 4.49 (Continued)

Attributes	F	P-value
20. Baggage belts (arrival)	1.602	.188
21. Baggage drop service	.780	.506
22. Baggage carts / trolley	3.560	.014*
23. Tour / hotel services	.436	.727
24. Car rental facilities / taxi	.061	.980
25. Safety measures	.697	.555
26. Security staff	.499	.683
27. Health services	.492	.688
28. Washrooms / toilets	3.292	.021*
29. Prayer room	2.755	.042*
30. Banks / exchange services	1.421	.236
31. Post office	3.882	.009*
32. Public telephone	6.715	.000*
33. Wi-Fi / internet services	2.296	.077
Total Importance	**.794**	**.498**

Note: ANOVA test at 0.05 significant level

Table 4.50 Multiple Comparison between Accompanying Groups on Importance Scores

Attributes		Accompanies			
2. Parking facilities	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.57	-	-	-	-
2 Spouse	3.86	(.701)*	-	-	(.865)*
3 Friends / Colleagues	4.28	-	-	-	-
4 Family	4.73	-	-	-	-
22. Baggage carts / trolley	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.82	-	-	-	-
2 Spouse	4.77	-	-	-	-
3 Friends / Colleagues	4.53	-	-	-	(.454)*
4 Family	4.98	-	-	-	-
28. Washrooms / toilets	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	5.27	-	-	-	(.302)*
2 Spouse	5.50	-	-	-	-
3 Friends / Colleagues	5.47	-	-	-	-
4 Family	5.57	-	-	-	-
29. Prayer room	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.10	-	-	-	-
2 Spouse	3.46	(.639)*	-	-	-
3 Friends / Colleagues	3.80	-	-	-	-
4 Family	3.83	-	-	-	-

Table 4.50 (Continued)

Attributes		Accompanies			
31. Post office	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.03	-	-	-	-
2 Spouse	3.38	(.648)*****	-	-	-
3 Friends / Colleagues	3.75	-	-	-	-
4 Family	3.84	-	-	-	-
32. Public telephone	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.22	-	-	-	-
2 Spouse	3.39	(.825)*****	-	(.586)*****	(.846)*****
3 Friends / Colleagues	3.98	-	-	-	-
4 Family	4.24	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

2) Number of accompanying people

Different numbers of traveling groups demonstrated significant differences on information desk, flight information screen, broadcasting/ announcement, baggage claiming system, baggage belts, safety measures, post office, and public telephone. The bigger group possibly generated higher importance on some specific attributes. For instance, the traveling groups with more than 6 people had importance mean scores higher than those of ones who travel alone on these attributes: flight information screen, baggage claiming system, and baggage belts. In terms of safety measures, passengers who experienced the airport with biggest group (more than 6 person) more concerned on that issue over the groups which have few numbers of people (3 persons) (Table 4.51, 4.52).

Table 4.51 Analysis of Variance between Number of Accompanying People and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.375	.223
2. Parking facilities *(Significant differences between groups were not found)*	2.492	.022*
3. Seat assignment	1.241	.284
4. Stairway / lifts / escalators	1.563	.157
5. Information desk / counters	2.218	.040*
6. Flight information screen	4.789	.000*
7. Broadcasting / announcement	2.160	.046*
8. Information signs	1.327	.244

Table 4.51 (Continued)

Attributes	F	P-value
9. Airport staff	1.516	.171
10. Security screening	.955	.455
11. Check-in counters	.564	.759
12. Baggage check-in	.657	.685
13. Retail shops	.205	.975
14. Restaurant / eating facilities	1.039	.399
15. Departure hall	.794	.575
16. Aerobridges / connecting gate	1.323	.245
17. Passenger steps / airfield buses	1.353	.233
18. Arrival hall	1.613	.142
19. Baggage claiming system	2.817	.011*
20. Baggage belts (arrival)	2.521	.021*
21. Baggage drop service	1.143	.336
22. Baggage carts / trolley	1.466	.188
23. Tour / hotel services	.743	.615
24. Car rental facilities / taxi	.415	.869
25. Safety measures	2.472	.023*
26. Security staff	1.276	.267
27. Health services	.926	.476
28. Washrooms / toilets	1.949	.072
29. Prayer room	2.083	.054
30. Banks / exchange services	1.146	.335
31. Post office	3.269	.004*
32. Public telephone	3.096	.006*
33. Wi-Fi / internet services	1.280	.265
Total Importance	**2.081**	**.054**

Note: ANOVA test at 0.05 significant level

Table 4.52 Multiple Comparison between Number of Accompanying People on Importance Scores

Attributes		Number of Accompanying People						
5. Information desk	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.69	-	-	-	-	-	-	-
2 2 Persons	4.76	-	-	-	-	-	-	-
3 3 Persons	4.43	-	-	-	-	-	-	-
4 4 Persons	4.58	-	-	-	-	-	-	-
5 5 Persons	4.62	-	-	-	-	-	-	-
6 6 Persons	4.50	-	-	-	-	-	-	-
7 More than 6 persons	5.45	-	-	(1.025)*	-	-	-	-

Table 4.52 (Continued)

Attributes		Number of Accompanying People						
6. Flight information screen	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.99	-	-	-	-	-	-	-
2 2 Persons	5.36	(.367)*	-	(.536)*	-	-	-	-
3 3 Persons	4.83	-	-	-	-	-	-	-
4 4 Persons	5.00	-	-	-	-	-	-	-
5 5 Persons	4.85	-	-	-	-	-	-	-
6 6 Persons	4.93	-	-	-	-	-	-	-
7 More than 6 persons	5.85	(.857)*	(1.025)*	-	-	-	-	-
7. Broadcasting	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.86	-	-	-	-	-	-	-
2 2 Persons	4.80	-	-	-	-	-	-	-
3 3 Persons	4.68	-	-	-	-	-	-	-
4 4 Persons	4.50	-	-	-	-	-	-	-
5 5 Persons	4.23	-	-	-	-	-	-	-
6 6 Persons	4.71	-	-	-	-	-	-	-
7 More than 6 persons	5.45	-	-	-	-	(1.219)*	-	-
19. Baggage claiming system	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.86	-	-	-	-	-	-	-
2 2 Persons	5.06	-	-	-	-	-	-	-
3 3 Persons	5.00	-	-	-	-	-	-	-
4 4 Persons	4.96	-	-	-	-	-	-	-
5 5 Persons	4.77	-	-	-	-	-	-	-
6 6 Persons	4.86	-	-	-	-	-	-	-
7 More than 6 persons	5.65	(.788)*	-	-	-	-	-	-
20. Baggage belts (arrival)	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.78	-	-	-	-	-	-	-
2 2 Persons	4.93	-	-	-	-	-	-	-
3 3 Persons	4.88	-	-	-	-	-	-	-
4 4 Persons	4.96	-	-	-	-	-	-	-
5 5 Persons	4.85	-	-	-	-	-	-	-
6 6 Persons	4.79	-	-	-	-	-	-	-
7 More than 6 persons	5.60	(.824)*	(.670)*	-	-	-	-	-
25. Safety measures	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	5.34	-	-	-	-	-	-	-
2 2 Persons	5.33	-	-	-	-	-	-	-
3 3 Persons	4.85	-	-	-	-	-	-	-
4 4 Persons	5.19	-	-	-	-	-	-	-
5 5 Persons	5.23	-	-	-	-	-	-	-
6 6 Persons	5.21	-	-	-	-	-	-	-
7 More than 6 persons	5.75	-	-	(.900)*****	-	-	-	-
7 More than 6 persons	4.45	-	-	-	-	-	-	-

Table 4.52 (Continued)

Attributes		Number of Accompanying People						
31. Post office	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.03	-	(.545)*****	-	-	-	-	-
2 2 Persons	3.48	-	-	-	-	-	-	-
3 3 Persons	3.65	-	-	-	-	-	-	-
4 4 Persons	3.96	-	-	-	-	-	-	-
5 5 Persons	3.69	-	-	-	-	-	-	-
6 6 Persons	4.14	-	-	-	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.22	-	(.559)*	-	-	-	-	-
2 2 Persons	3.66	-	-	-	-	-	-	-
3 3 Persons	4.00	-	-	-	-	-	-	-
4 4 Persons	4.08	-	-	-	-	-	-	-
5 5 Persons	4.23	-	-	-	-	-	-	-
6 6 Persons	4.21	-	-	-	-	-	-	-
7 More than 6 persons	4.65	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Travel arrangements

In this research, 95% of the respondents were directly involved with making the travel arrangement while 5.7 used travel agents. The chosen of the travel arrangement does not show a significant result on total importance (P = .348). However, an individual item analysis indicates that the person who made different travel arrangement has significant influence on the retail shops (P = .040), tour/hotel services (P = .000), and washrooms (P = .018). Passengers who used travel agents for their trips tended to rate on importance levels of the three attributes higher than those who arrange the trips by themselves (Table 4.53).

4.3.3.3 Experience of air transport

Three elements were used to examine the experience of the air transport. These elements included the reasons for choosing low-cost carriers, most frequently used airlines, and the experience of domestic LCC flights per year. The aim of this section was to examine the overall experience of the air transport of low-cost passengers to the importance levels.

Table 4.53 Travel Arrangement Comparison on Importance Levels of Operational Attributes

Attributes	Package		Own arrangement		t	df	P-value
	$\bar{x}$	SD	$\bar{x}$	SD			
1. Accessibility	4.92	1.248	4.98	1.033	-.276	421	.782
2. Parking facilities	4.21	1.817	4.39	1.601	-.524	421	.601
3. Seat assignment	4.67	1.129	4.77	1.012	-.503	421	.615
4. Stairway / lifts / escalators	4.71	1.122	4.55	1.151	.671	421	.503
5. Information desk	5.04	1.122	4.69	1.097	1.516	421	.130
6. Flight information screen	5.38	.770	5.14	1.011	1.141	421	.254
7. Broadcasting	5.00	1.063	4.79	1.131	.899	421	.369
8. Information signs	5.33	.868	5.21	.945	.683	6.391	.500
9. Airport staff	5.21	.932	5.07	.917	.703	421	.482
10. Security screening	5.33	.816	5.38	.938	-.275	6.786	.785
11. Check-in counters	5.17	1.049	5.23	.870	-.359	421	.720
12. Baggage check-in	5.13	.900	5.18	.871	-.316	421	.752
13. Retail shops	4.42	.974	3.92	1.161	2.064	421	.040*
14. Restaurant / eating facilities	4.42	1.060	4.21	1.105	.901	421	.368
15. Departure hall	4.50	1.216	4.78	.971	-1.372	421	.171
16. Aerobridges	4.83	.917	4.78	.973	.276	421	.782
17. Passenger steps / buses	4.92	.929	4.90	.931	.099	421	.921
18. Arrival hall	4.92	.654	4.67	.988	1.756	9.722	.089
19. Baggage claiming system	5.17	.702	4.98	.896	1.002	421	.317
20. Baggage belts (arrival)	5.13	.797	4.88	.929	1.253	421	.211
21. Baggage drop service	5.04	.751	4.47	1.147	3.471	9.879	.002
22. Baggage carts / trolley	4.75	1.189	4.74	.995	.038	421	.969
23. Tour / hotel services	4.83	.761	4.02	1.232	4.864	0.767	.000*
24. Car rental facilities / taxi	4.29	1.197	4.12	1.230	.664	421	.507
25. Safety measures	5.46	.721	5.28	.958	.881	421	.379
26. Security staff	5.38	.647	5.30	.910	.393	421	.694
27. Health services	4.88	1.262	4.97	1.047	-.437	421	.662
28. Washrooms / toilets	5.67	.482	5.40	.777	2.490	0.716	.018*
29. Prayer room	4.13	1.569	3.83	1.610	.860	421	.390
30. Banks / exchange services	4.75	1.482	4.58	1.207	.675	421	.500
31. Post office	3.50	1.474	3.81	1.364	-1.092	421	.275
32. Public telephone	3.79	1.641	4.01	1.390	-.748	421	.455
33. Wi-Fi / internet services	5.54	1.179	5.19	1.126	1.502	421	.134
Average Scores	**4.8598**	**.66737**	**4.7342**	**.63484**	**.939**	**421**	**.348**

Note: t-test at 0.05 statistical significant level

1) Reasons of choosing LCC

The first element considered relevant in the airport experience is the reason for selecting LCC. Low cost carriers were preferred because of their low cost although other factors such as flight schedule, airline route, location, flight

frequencies and booking system were essential. The reason for selecting LCC significantly influenced the importance of the parking facilities, seat assignment, connecting bridges, baggage claiming system, car rental services and safety measures.

However, as analyzed on multiple comparisons between groups of reasons, there was only 'car rental facilities/taxi' attribute showed a significant result. That is, ones who chose LCC with the reason of airport location did not feel car rental facilities as importance compared to those who were based on booking system while choosing LCC (Table 4.54, 4.55).

Table 4.54 Analysis of Variance between Reasons of Choosing LCC and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.701	.119
2. Parking facilities *(Significant differences between groups were not found)*	2.215	.041*
3. Seat assignment *(Significant differences between groups were not found)*	2.162	.046*
4. Stairway / lifts / escalators	2.065	.056
5. Information desk / counters	1.688	.122
6. Flight information screen	1.080	.374
7. Broadcasting / announcement	1.363	.228
8. Information signs	1.153	.331
9. Airport staff	.462	.836
10. Security screening	.297	.938
11. Check-in counters	1.301	.255
12. Baggage check-in	.408	.874
13. Retail shops	1.043	.397
14. Restaurant / eating facilities	.695	.654
15. Departure hall	1.400	.213
16. Aerobridges *(Significant differences between groups were not found)*	2.232	.039*
17. Passenger steps / airfield buses	.771	.593
18. Arrival hall	1.420	.205
19. Baggage claiming system *(Significant differences between groups were not found)*	2.208	.041*
20. Baggage belts (arrival)	1.300	.256
21. Baggage drop service	1.694	.121
22. Baggage carts / trolley	1.122	.349
23. Tour / hotel services	.926	.476
24. Car rental facilities / taxi	2.425	.026*
25. Safety measures *(Significant differences between groups were not found)*	1.252	.279
26. Security staff	1.406	.211
27. Health services	1.953	.071
28. Washrooms / toilets	.681	.665
29. Prayer room	1.481	.183
30. Banks / exchange services	.700	.650

Table 4.54 (Continued)

Attributes	F	P-value
31. Post office	2.033	.060
32. Public telephone	.793	.576
33. Wi-Fi / internet services	.893	.500
Total Importance	**1.890**	**.081**

Note: ANOVA test at 0.05 significant level

Table 4.55 Multiple Comparison between Different Reasons of Choosing LCC on Importance Scores

Attributes		Reasons of Choosing LCC						
24. Car rental facilities/taxi	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Price	4.09	-	-	-	-	-	-	-
2 Flight Frequencies	4.22	-	-	-	-	-	-	-
3 Flight Schedule	4.38	-	-	-	-	-	-	-
4 Airline service	4.67	-	-	-	-	-	-	-
5 Airline route	4.15	-	-	-	-	-	-	-
6 Booking System	5.50	-	-	-	-	-	-	(2.100)*
7 Airport Location	3.40	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

2) Most frequently used airlines

The third experience examined under the air transport experience is the most frequently used airlines. Popularly used airlines in domestic routes were analyzed in a relationship to the importance levels. Different airlines used depicted significant results on importance mean scores of some attributes. Four operational attributes were significantly found comprised of parking facilities (P = .034), stairway/lifts/escalators (P = .025), prayer room (P = .000), and post office (P = .013). The differences found mostly demonstrated the significant differences between the low-cost and the full-service. For instance, passengers who frequently used Thai Airways International gave importance to stairway/ lifts/escalators over those who usually flew with Thai AirAsia. Another example is that Thai Airways International

favored passengers did not gave importance to prayer room as those of Nok Air or orient Thai Airlines did (Table 4.56, 4.57).

Table 4.56 Analysis of Variance between Most Frequently Used Airlines and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.732	.142
2. Parking facilities	2.638	.034*
3. Seat assignment	.287	.887
4. Stairway / lifts / escalators	2.806	.025*
5. Information desk / counters	.285	.888
6. Flight information screen	1.444	.219
7. Broadcasting / announcement	1.374	.242
8. Information signs	.825	.510
9. Airport staff	.242	.914
10. Security screening	.353	.842
11. Check-in counters	.343	.849
12. Baggage check-in	.938	.442
13. Retail shops	1.121	.346
14. Restaurant / eating facilities	1.082	.365
15. Departure hall	.861	.487
16. Aerobridges / connecting gate	1.910	.108
17. Passenger steps / airfield buses	.528	.715
18. Arrival hall	1.694	.150
19. Baggage claiming system	2.179	.071
20. Baggage belts (arrival)	1.979	.097
21. Baggage drop service	.888	.471
22. Baggage carts / trolley	1.737	.141
23. Tour / hotel services	.922	.451
24. Car rental facilities / taxi	1.713	.146
25. Safety measures	2.221	.066
26. Security staff	1.661	.158
27. Health services	1.108	.352
28. Washrooms / toilets	1.429	.224
29. Prayer room	5.841	.000*
30. Banks / exchange services	1.706	.148
31. Post office	3.188	.013*
32. Public telephone	1.882	.113
33. Wi-Fi / internet services	1.362	.246
Total Importance	**1.269**	**.281**

Note: ANOVA test at 0.05 significant level

Table 4.57 Multiple Comparison between Top Used Airlines on Importance Scores

Attributes		Airlines				
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	4.18	-	-	-	-	-
2 Bangkok Airways	4.57	-	-	-	-	-
3 Nok Air	4.69	(.509)*	-	-	-	-
4 Orient Thai Airlines	5.17	-	-	-	-	-
5 Thai Airways International	4.24	-	-	-	-	-
4. Stairway / lifts / escalators	**x̄**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	4.42	-	-	-	-	-
2 Bangkok Airways	4.36	-	-	-	-	-
3 Nok Air	4.63	-	-	-	-	-
4 Orient Thai Airlines	5.00	-	-	-	-	-
5 Thai Airways International	4.98	(.556)*	-	-	-	-
29. Prayer room	**x̄**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	3.69	-	-	(.543)*	-	-
2 Bangkok Airways	4.21	-	-	-	-	-
3 Nok Air	4.23	-	-	-	-	-
4 Orient Thai Airlines	5.17	-	-	-	-	-
5 Thai Airways International	3.20	-	-	(1.038)*	(1.971)*	-
31. Post office	**x̄**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	3.80	-	-	-	-	-
2 Bangkok Airways	3.64	-	-	-	-	-
3 Nok Air	4.01	-	-	-	-	-
4 Orient Thai Airlines	3.83	-	-	-	-	-
5 Thai Airways International	3.20	-	-	(..819)*	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Experience of domestic LCC flight per year

Numbers of flights on domestic LCC respondents annually used were also analyzed on the importance levels. Five attributes including parking facilities, seat assignment, baggage cart/trolley, washrooms/toilets, and prayer rooms showed significant results on importance mean. Multiple comparisons between groups found that passengers who had higher frequencies on domestic LCC did not give much importance on seat assignment inside airports compared to ones who had lesser annual experiences (4-6 times and 7-8 times). Ones who used the domestic LCC 5-6 times a year had importance mean score on baggage cards/trolley higher than those who flew domestic LCC for 3-4 times a year (Table 4.58, 4.59).

Table 4.58 Analysis of Variance between Experience of Domestic LCC Flights and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.965	.439
2. Parking facilities *(Significant differences between groups were not found)*	3.621	.003*
3. Seat assignment	3.038	.010*
4. Stairway / lifts / escalators	1.347	.243
5. Information desk / counters	1.990	.079
6. Flight information screen	2.093	.065
7. Broadcasting / announcement	1.321	.254
8. Information signs	1.122	.348
9. Airport staff	1.030	.399
10. Security screening	2.036	.073
11. Check-in counters	.653	.659
12. Baggage check-in	.308	.908
13. Retail shops	.850	.515
14. Restaurant / eating facilities	.683	.636
15. Departure hall	1.694	.135
16. Aerobridges / connecting gate	1.103	.358
17. Passenger steps / airfield buses	.336	.891
18. Arrival hall	1.132	.342
19. Baggage claiming system	1.606	.157
20. Baggage belts (arrival)	1.293	.266
21. Baggage drop service	.319	.901
22. Baggage carts / trolley	3.247	.007*
23. Tour / hotel services	1.205	.306
24. Car rental facilities / taxi	.839	.523
25. Safety measures	1.004	.415
26. Security staff	1.539	.176
27. Health services	1.414	.218
28. Washrooms / toilets	3.330	.006*
29. Prayer room *(Significant differences between groups were not found)*	2.548	.027*
30. Banks / exchange services	.742	.592
31. Post office	2.105	.064
32. Public telephone	.657	.656
33. Wi-Fi / internet services	.569	.723
Total Importance	**1.104**	**.357**

Note: ANOVA test at 0.05 significant level

Table 4.59 Multiple Comparison between Domestic LCC Experiences on Importance Scores

Attributes		Domestic LCC Experiences					
3. Seat assignment	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times/year	4.78	-	-	-	-	-	-
2 3-4 times/ year	4.78	-	-	-	-	-	-
3 5-6 times/year	4.97	-	-	-	-	-	-
4 7-8 times/year	5.25	-	-	-	-	-	-
5 9-10 times/year	4.74	-	-	-	-	-	-
6 More than 10 times/year	4.34	-	-	(.627)*	(.910)*	-	-
22. Baggage carts / trolley	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times/year	4.76	-	-	-	-	-	-
2 3-4 times/ year	4.51	-	-	-	(.860)*	-	-
3 5-6 times/year	4.82	-	-	-	-	-	-
4 7-8 times/year	5.38	-	-	-	-	-	-
5 9-10 times/year	4.86	-	-	-	-	-	-
6 More than 10 times/year	4.92	-	-	-	-	-	-
28. Washrooms / toilets	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times/year	5.51	-	-	-	-	-	-
2 3-4 times/ year	5.33	-	-	-	-	-	-
3 5-6 times/year	5.56	-	-	-	-	-	-
4 7-8 times/year	5.88	-	-	-	-	-	-
5 9-10 times/year	5.17	-	-	-	(.708)*	-	-
6 More than 10 times/year	5.34	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.3.4 Experience of airports

1) Numbers of arrivals and departures at the airport

The number of arrivals and departures at the airport influence the scoring or perceptions toward the parking facilities, seat assignment, washroom/toilets, prayer room, and post office (Table 4.60). Multiple comparisons found that there were no differences between groups on washrooms/toilets and post office.

The cleanliness of the washrooms is a major concern not only to the first-time visitors. Most of the respondents cited the cleanliness of toilets is an essential part of premium airport services. While asked to name what important things for the passengers that the airport should realize, some of the respondents noted,

Table 4.60 Analysis of Variance between Airport Experiences and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.068	.377
2. Parking facilities	6.181	.000*
3. Seat assignment	2.292	.045*
4. Stairway / lifts / escalators	.442	.819
5. Information desk / counters	.381	.862
6. Flight information screen	1.447	.206
7. Broadcasting / announcement	.906	.477
8. Information signs	.562	.729
9. Airport staff	.110	.990
10. Security screening	.620	.685
11. Check-in counters	1.603	.158
12. Baggage check-in	.568	.725
13. Retail shops	.979	.430
14. Restaurant / eating facilities	1.023	.403
15. Departure hall	1.921	.090
16. Aerobridges / connecting gate	1.958	.084
17. Passenger steps / airfield buses	1.282	.271
18. Arrival hall	1.128	.345
19. Baggage claiming system	1.171	.323
20. Baggage belts (arrival)	.864	.505
21. Baggage drop service	.706	.619
22. Baggage carts / trolley	2.019	.075
23. Tour / hotel services	.688	.633
24. Car rental facilities / taxi	1.194	.311
25. Safety measures	1.078	.372
26. Security staff	1.330	.250
27. Health services	.332	.894
28. Washrooms / toilets *(Significant differences between groups were not found)*	2.504	.030*
29. Prayer room	4.124	.001
30. Banks / exchange services	.422	.833
31. Post office *(Significant differences between groups were not found)*	2.751	.019*
32. Public telephone	1.249	.285
33. Wi-Fi / internet services	.238	.945
Total Importance	**.959**	**.443**

Note: ANOVA test at 0.05 significant level

"For me? Toilets and safety are significant.
Clean and enough toilets are necessary…" (P5)

"Toilet' is important for public places including airport.
Numbers of toilet rooms and the cleanliness are both important."(P20)

Respondents who had more experiences on the specific airports (more than 10 times) concerned more on parking facilities over the passengers who had visited the airports for 1-2 times (Table 4.61).

Table 4.61 Multiple Comparison between Different Airport Experiences on Importance Scores

Attributes		Airport Experiences					
2. Parking facilities	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.08	-	-	-	-	-	(1.373)*
2 3-4 times	4.68	-	-	-	-	-	-
3 5-6 times	4.77	-	-	-	-	-	-
4 7-8 times	4.20	-	-	-	-	-	-
5 9-10 times	4.68	-	-	-	-	-	-
6 More than 10 times	5.46	-	-	-	-	-	-
3. Seat assignment	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.76	-	-	-	-	-	-
2 3-4 times	4.74	-	-	-	-	-	-
3 5-6 times	5.26	-	-	-	(.908)*	-	-
4 7-8 times	4.35	-	-	-	-	-	-
5 9-10 times	4.58	-	-	-	-	-	-
6 More than 10 times	4.77	-	-	-	-	-	-
29. Prayer room	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	3.58	-	-	-	(1.116)*	-	-
2 3-4 times	4.21	-	-	-	-	-	-
3 5-6 times	4.13	-	-	-	-	-	-
4 7-8 times	4.70	-	-	-	-	-	-
5 9-10 times	4.47	-	-	-	-	-	-
6 More than 10 times	4.00	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

2) Numbers of times flying with LCC at the airport

The linkage between LCC experiences and airport experiences were examined in a relation to importance levels. Results shown that there were some significant results between importance levels and parking facilities, washroom/toilets, prayer room, post office, and public telephone.

Multiple comparisons revealed the significant differences of importance mean between higher experiences and lower experiences on LCC at the specific airports. Ones who had higher experiences on LCC at the specific airports (9-10 times and more than 10 times) rated higher importance scores on parking facilities over the 1-2 time experienced passengers. Passengers who had experienced for 9-10

times also rated washrooms/toilets with higher importance compared to those who had experienced for 1-2 times (Table 4.62, 4.63).

Table 4.62 Analysis of Variance between Airport Experiences with LCC and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.070	.376
2. Parking facilities	5.398	.000*
3. Seat assignment	1.034	.397
4. Stairway / lifts / escalators	.723	.606
5. Information desk / counters	.584	.712
6. Flight information screen	1.596	.160
7. Broadcasting / announcement	.554	.735
8. Information signs	.643	.667
9. Airport staff	.690	.631
10. Security screening	.809	.544
11. Check-in counters	1.059	.382
12. Baggage check-in	.611	.691
13. Retail shops	1.163	.327
14. Restaurant / eating facilities	.891	.487
15. Departure hall	1.527	.180
16. Aerobridges / connecting gate	1.972	.082
17. Passenger steps / airfield buses	1.780	.116
18. Arrival hall	.762	.578
19. Baggage claiming system	1.712	.131
20. Baggage belts (arrival)	1.106	.356
21. Baggage drop service	1.256	.282
22. Baggage carts / trolley	1.227	.295
23. Tour / hotel services	.630	.677
24. Car rental facilities / taxi	1.080	.371
25. Safety measures	.844	.519
26. Security staff	1.522	.182
27. Health services	.658	.655
28. Washrooms / toilets	2.436	.034*
29. Prayer room	3.546	.004*
30. Banks / exchange services	1.303	.261
31. Post office	3.200	.008*
32. Public telephone	3.040	.010*
33. Wi-Fi / internet services	.688	.633
Total Importance	**1.348**	**.243**

Note: ANOVA test at 0.05 significant level

Table 4.63 Multiple Comparison between Different Times Visiting the Airports with LCC on Importance Scores

Attributes		Times Visit the Airports with LCC					
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.11	-	-	-	-	(1.238)*	(1.245)*
2 3-4 times	4.61	-	-	-	-	-	-
3 5-6 times	4.69	-	-	-	-	-	-
4 7-8 times	4.67	-	-	-	-	-	-
5 9-10 times	5.35	-	-	-	-	-	-
6 More than 10 times	5.36	-	-	-	-	-	-
28. Washrooms / toilets	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	3.62	-	-	-	-	(.647)*	-
2 3-4 times	4.34	-	-	-	-	-	-
3 5-6 times	4.17	-	-	-	-	-	-
4 7-8 times	4.53	-	-	-	-	-	-
5 9-10 times	4.29	-	-	-	-	-	-
6 More than 10 times	3.96	-	-	-	-	-	-
29. Prayer room	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	3.62	-	(.725)*	-	-	-	-
2 3-4 times	4.34	-	-	-	-	-	-
3 5-6 times	4.17	-	-	-	-	-	-
4 7-8 times	4.53	-	-	-	-	-	-
5 9-10 times	4.29	-	-	-	-	-	-
6 More than 10 times	3.96	-	-	-	-	-	-
31. Post office	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	3.61	-	(.602)*	-	-	-	-
2 3-4 times	4.21	-	-	-	-	-	-
3 5-6 times	4.24	-	-	-	-	-	-
4 7-8 times	4.13	-	-	-	-	-	-
5 9-10 times	3.88	-	-	-	-	-	-
6 More than 10 times	3.96	-	-	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	3.86	-	(.592)*	-	-	-	-
2 3-4 times	4.45	-	-	-	-	-	-
3 5-6 times	4.34	-	-	-	-	-	-
4 7-8 times	4.53	-	-	-	-	-	-
5 9-10 times	3.65	-	-	-	-	-	-
6 More than 10 times	3.88	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Average time used on departure and arrival

Average time used on both departure and arrival showed some significant results on some attributes. Washrooms/toilets was the only attribute found on departure time duration variable whereas flight information screen and prayer room were primarily found on arrival time duration in the analysis of variance.

However, the analysis between different spent time groups through multiple comparisons, there are no significant results found on all attributes (Table 4.64, 4.65).

Table 4.64 Analysis of Variance between Time Spent on Departure and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.306	.909
2. Parking facilities	.972	.434
3. Seat assignment	.157	.978
4. Stairway / lifts / escalators	.680	.639
5. Information desk / counters	1.213	.302
6. Flight information screen	.827	.531
7. Broadcasting / announcement	.680	.639
8. Information signs	.352	.881
9. Airport staff	1.151	.333
10. Security screening	.485	.787
11. Check-in counters	.370	.869
12. Baggage check-in	.715	.613
13. Retail shops	.620	.685
14. Restaurant / eating facilities	.985	.427
15. Departure hall	.865	.505
16. Aerobridges / connecting gate	.375	.866
17. Passenger steps / airfield buses	1.591	.161
18. Arrival hall	.608	.694
19. Baggage claiming system	1.299	.263
20. Baggage belts (arrival)	1.084	.369
21. Baggage drop service	2.151	.059
22. Baggage carts / trolley	2.238	.050
23. Tour / hotel services	1.942	.086
24. Car rental facilities / taxi	.719	.610
25. Safety measures	.300	.913
26. Security staff	.198	.963
27. Health services	1.069	.377
28. Washrooms / toilets *(Significant differences between groups were not found)*	2.339	.041*
29. Prayer room	1.019	.406
30. Banks / exchange services	.598	.702
31. Post office	.141	.983
32. Public telephone	.774	.569
33. Wi-Fi / internet services	2.213	.052
Total Importance	**.649**	**.662**

Note: ANOVA test at 0.05 significant level

Table 4.65 Analysis of Variance between Time Spent on Arrival and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.394	.225
2. Parking facilities	1.988	.079
3. Seat assignment	1.926	.089
4. Stairway / lifts / escalators	.427	.830
5. Information desk / counters	.394	.853
6. Flight info. screen *(Significant differences between groups were not found)*	2.277	.046*
7. Broadcasting / announcement	.533	.751
8. Information signs	1.316	.256
9. Airport staff	1.110	.355
10. Security screening	.332	.894
11. Check-in counters	.946	.451
12. Baggage check-in	.675	.643
13. Retail shops	.330	.895
14. Restaurant / eating facilities	.461	.805
15. Departure hall	.548	.740
16. Aerobridges / connecting gate	1.198	.309
17. Passenger steps / airfield buses	2.016	.075
18. Arrival hall	1.767	.118
19. Baggage claiming system	.917	.470
20. Baggage belts (arrival)	1.153	.332
21. Baggage drop service	1.419	.216
22. Baggage carts / trolley	.659	.655
23. Tour / hotel services	1.838	.104
24. Car rental facilities / taxi	1.576	.166
25. Safety measures	.945	.452
26. Security staff	1.173	.322
27. Health services	1.490	.192
28. Washrooms / toilets	.641	.669
29. Prayer room *(Significant differences between groups were not found)*	2.410	.036*
30. Banks / exchange services	1.140	.338
31. Post office	1.745	.123
32. Public telephone	1.953	.085
33. Wi-Fi / internet services	.617	.687
Total Importance	**1.426**	**.214**

Note: ANOVA test at 0.05 significant level

4.3.3.5 Airports of the study

The study involved four major airports that include Phuket (HKT), Hat Yai (HDY), Chiang Mai (CNX), and Chiang Rai (CEI). It is hypothesized that each airport has influence the rating of the importance level on operational attributes. The analysis of variance between the four airports indicates a significant between group

differences. In general, the airport visited influenced the rating of the total importance scores, accessibility to the airport, parking facilities, lifts/escalators, check-in counters, retail shops, restaurants, baggage belts, tour/hotel services, car rental services, health services, prayer room, exchange services, post office and telephone services (Table 4.66).

Table 4.66 Analysis of Variance between Studied Airports and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport *(Significant differences between groups were not found)*	2.777	.041*
2. Parking facilities	6.712	.000*
3. Seat assignment	.938	.422
4. Stairway / lifts / escalators	3.272	.021*
5. Information desk / counters	1.429	.234
6. Flight information screen	2.060	.105
7. Broadcasting / announcement	2.513	.058
8. Information signs	1.164	.323
9. Airport staff	2.480	.061
10. Security screening	1.022	.383
11. Check-in counters	4.041	.008*
12. Baggage check-in	.347	.791
13. Retail shops	2.967	.032*
14. Restaurant / eating facilities	4.055	.007*
15. Departure hall	.679	.565
16. Aerobridges / connecting gate	1.780	.150
17. Passenger steps / airfield buses	1.313	.270
18. Arrival hall	.735	.532
19. Baggage claiming system	1.701	.166
20. Baggage belts (arrival)	3.419	.017*
21. Baggage drop service	1.473	.221
22. Baggage carts / trolley	.992	.396
23. Tour / hotel services	2.942	.033*
24. Car rental facilities / taxi	2.704	.045*
25. Safety measures	2.128	.096
26. Security staff	.430	.731
27. Health services	3.323	.020*
28. Washrooms / toilets	.239	.869
29. Prayer room	9.194	.000*
30. Banks / exchange services *(Significant differences between groups were not found)*	2.371	.070*
31. Post office	3.459	.016*
32. Public telephone	7.051	.000*
33. Wi-Fi / internet services	.183	.908
Total Importance	**4.228**	**.006***

Note: ANOVA test at 0.05 significant level

Multiple comparisons found that LCC passengers of Hat Yai International Airport had overall importance scores higher than passengers of Phuket

International Airport, significantly. Passengers at Hat Yai International Airport also viewed parking facilities with higher importance scores than ones of Chiang Mai and Mae Fah Luang Chiang Rai International Airport. However, some attributes were rated higher by passengers at Chiang Mai over the scores of those at Phuket International Airport (e.g., check-in counters and eating facilities) (Table 4.67).

Table 4.67 Multiple Comparison between Different Airports on Importance Scores

Attributes		**Airports**			
2. Parking facilities	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.40	-	-	-	-
2 Hat Yai (Had Yai)	4.92	-	-	(1.010)*	(.638)*
3 CNX (Chiang Mai)	3.91	-	-	-	-
4 CEI (Chiang Rai)	4.28	-	-	-	-
4. Stairway / lifts / escalators	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.41	-	-	-	-
2 Hat Yai (Had Yai)	4.84	(.434)*	-	-	-
3 CNX (Chiang Mai)	4.60	-	-	-	-
4 CEI (Chiang Rai)	4.42	-	-	-	-
11. Check-in counters	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	5.01	-	-	(325)*	(348)*
2 Hat Yai (Had Yai)	5.28	-	-	-	-
3 CNX (Chiang Mai)	5.33	-	-	-	-
4 CEI (Chiang Rai)	5.36	-	-	-	-
13. Retail shops	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.72	-	-	-	-
2 Hat Yai (Had Yai)	4.15	(.421)*	-	-	-
3 CNX (Chiang Mai)	4.07	-	-	-	-
4 CEI (Chiang Rai)	3.91	-	-	-	-
14. Restaurant / eating facilities	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.98	-	-	(.484)*	-
2 Hat Yai (Had Yai)	4.33	-	-	-	-
3 CNX (Chiang Mai)	4.47	-	-	-	-
4 CEI (Chiang Rai)	4.17	-	-	-	-
20. Baggage belts (arrival)	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.72	-	-	-	-
2 Hat Yai (Had Yai)	5.11	(.390)*	-	-	-
3 CNX (Chiang Mai)	4.94	-	-	-	-
4 CEI (Chiang Rai)	4.87	-	-	-	-

Table 4.67 (Continued)

Attributes		Airports			
23. Tour / hotel services	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.99	-	-	-	-
2 Hat Yai (Had Yai)	4.33	-	-	-	(..487)*
3 CNX (Chiang Mai)	4.14	-	-	-	-
4 CEI (Chiang Rai)	3.85	-	-	-	-
24. Car rental facilities / taxi	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.06	-	-	-	-
2 Hat Yai (Had Yai)	4.43	-	-	(.469)*	-
3 CNX (Chiang Mai)	3.96	-	-	-	-
4 CEI (Chiang Rai)	4.11	-	-	-	-
27. Health services	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.77	-	-	-	-
2 Hat Yai (Had Yai)	5.22	(.447)*	-	-	-
3 CNX (Chiang Mai)	4.99	-	-	-	-
4 CEI (Chiang Rai)	4.95	-	-	-	-
29. Prayer room	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.92	-	-	-	-
2 Hat Yai (Had Yai)	4.49	(.568)*	-	(.865)*	(1.105)*
3 CNX (Chiang Mai)	3.63	-	-	-	-
4 CEI (Chiang Rai)	3.38	-	-	-	-
31. Post office	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.67	-	-	-	-
2 Hat Yai (Had Yai)	4.19	(.518)*	-	-	(.524)*
3 CNX (Chiang Mai)	3.72	-	-	-	-
4 CEI (Chiang Rai)	3.66	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.76	-	-	-	-
2 Hat Yai (Had Yai)	4.55	(.788)*	-	-	(.735)*
3 CNX (Chiang Mai)	3.96	-	-	-	-
4 CEI (Chiang Rai)	3.82	-	-	-	-
Total Importance	**x̄**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.63	-	-	-	-
2 Hat Yai (Had Yai)	4.93	(.287)*	-	-	-
3 CNX (Chiang Mai)	4.75	-	-	-	-
4 CEI (Chiang Rai)	4.70	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.4 What are the Efficiency Levels For Thailand Airports' Operational Attributes And Operational Procedures? (RQ7)

As the level of air transport competition increases, the need to improve efficiency has gained momentum. Airports are searching strategies to promote their competitiveness, increase efficiency with limited resources, increase flexibility of airport resources, provide equal access and facilities to passengers and allow the new entrant of huge low-cost carriers. Therefore, efficiency is at the core of surviving the high competitive market. Respondents were asked to rate the efficiency level of various attributes and operations of the airports from efficient to strongly inefficient. According to the tally of the frequency of every attribute, Thailand airports were rated as somehow efficient (40.5%). Majority of the operation attributes were rated as somewhat efficient with respondents feeling that the provision of internet services (Wi-Fi) was strongly insufficient ($\bar{x}$ = 2.49) (Table 4.68). The general discontent of the respondents is expressed in the interview part of the study where several respondents lamented.

"I don't think there is Wi-Fi here but at this century,
the internet connection is a must for people, especially for tourists." (P18)

"Free WI-FI is a need for most of passengers nowadays.
It the basic needs for today!" (P8)

Table 4.68 Efficiency Mean Score Ranking on Airport Operational Attributes

Rank	Operational Attributes	n	Mean	S.D.	Efficiency Levels*	% Counts
1	**Check-in counters**	**423**	**4.56**	**0.969**	**5: Efficient**	**42.8**
2	**Baggage check-in**	**423**	**4.49**	**0.923**	**5: Efficient**	**39.2**
3	**Baggage carts / trolley**	**422**	**4.47**	**0.918**	**5: Efficient**	**41.9**
4	Security screening	423	4.46	1.07	4: Somewhat efficient	34.8
5	Safety measures	423	4.43	1.041	4: Somewhat efficient	37.4
6	Accessibility to the airport	423	4.41	1.037	4: Somewhat efficient	39.2
7	Security staff	423	4.36	1.015	4: Somewhat efficient	41.4
8	Airport staff	423	4.34	1.013	4: Somewhat efficient	41.1
9	Information signs	423	4.31	0.969	4: Somewhat efficient	42.1
10	Washrooms / toilets	423	4.30	1.082	4: Somewhat efficient	35.7
11	Baggage claiming system	423	4.27	0.888	4: Somewhat efficient	49.2
12	Broadcasting / announcement	423	4.26	0.986	4: Somewhat efficient	45.6

Table 4.68 (Continued)

Rank	Operational Attributes	n	Mean	S.D.	Efficiency Levels*	% Counts
13	Flight information screen	423	4.25	1.003	4: Somewhat efficient	41.8
14	Aerobridges / connecting gate	423	4.24	0.951	4: Somewhat efficient	44.2
15	Baggage belts (arrival)	423	4.21	0.923	4: Somewhat efficient	47.0
16	Stairway / lifts / escalators	402	4.20	0.983	4: Somewhat efficient	43.8
17	Seat assignment & waiting area	423	4.18	1.004	4: Somewhat efficient	43.0
18	Arrival hall	423	4.17	0.917	4: Somewhat efficient	48.7
	Health services	254	4.17	1.146	4: Somewhat efficient	42.1
	Banks / exchange services	305	4.17	1.026	4: Somewhat efficient	42.6
19	Departure hall	423	4.12	0.951	4: Somewhat efficient	46.6
20	Baggage drop service	296	4.09	0.991	4: Somewhat efficient	42.6
21	Prayer room	212	4.08	1.099	4: Somewhat efficient	39.6
22	Information desk / counters	370	4.07	1.032	4: Somewhat efficient	47.0
	Car rental facilities / taxi	289	4.07	1.092	4: Somewhat efficient	41.2
23	Public telephone	261	4.05	1.096	4: Somewhat efficient	39.8
24	Post office	240	4.02	1.047	4: Somewhat efficient	40.4
25	Tour / hotel services	295	4.01	1.017	4: Somewhat efficient	45.1
26	**Parking facilities**	**345**	**3.92**	**1.189**	**4: Somewhat efficient**	**38.6**
	Passenger steps / airfield buses	**324**	**3.92**	**1.023**	**4: Somewhat efficient**	**46.0**
27	**Retail shops**	**396**	**3.75**	**1.044**	**4: Somewhat efficient**	**43.9**
28	**Restaurant / eating facilities**	**389**	**3.69**	**1.081**	**4: Somewhat efficient**	**40.6**
29	**Wi-Fi / internet services**	**423**	**2.49**	**1.539**	**1: Strongly inefficient**	**39.7**
	Grand Mean	**12402**	**4.21**	**.668**	**4: Somewhat efficient**	**40.5**

Note: Efficiency levels derived from frequency counts at each efficiency level, not the mean scores.

The respondents reported that they were pleased with the check-in counters ($\bar{x}$ = 4.56), baggage-check-in ($\bar{x}$ = 4.49), and baggage carts ($\bar{x}$ = 4.47) Attributes such as security screening, safety measures, flight information and information desks were rated as somewhat efficient. Most airports are concerned with establishing how to utilize efficient check-in counters. According to Park and Ahn (2003), insufficient terminal capacity and the unproductive utilization of facilities such as check-in counters are major features causing congestion and delays at airport passenger terminals. However, improving the efficiency of the check-in counter operations is a viable strategy to reduce congestion and improve overall airport efficiency. Current baggage transport system in most airports is labor intensive and bears the risks of damaging or losing In addition, the respondents felt that the overall state of washrooms was somewhat efficient. Most respondents echoed the need to improve

the cleanliness and number of washrooms. Several interviewees expressed the need for various airports to increase the number of female washrooms.

"Numbers and service points of toilets should be more.
I think it's now not enough for passengers especially, females.
Mates may have to work hard to make the toilet clean for the time being.
Toilets are also more significant in some area like arrival hall and departure hall where a lot of passengers are stuck." (P5)

In regard to the efficiency of the operation procedures, the study examined the arrival procedure including the process of airplane to arrival hall (deplane), arrival hall to baggage claim, baggage claim to retails/terminal, and terminal gate to ground transport. The respondents rated the overall arrival procedures as somewhat efficient ($\bar{x}$ = 4.25), Airplane to the arrival hall process was rated the lowest ($\bar{x}$ = 4.18), arrival hall to baggage claim was rated the highest ($\bar{x}$ = 4.33).

The departure procedures included the ground transport to terminal, terminal to check-in counters, check-in counters to security screening, security screening to departure hall and departure hall to airplane. The respondents felt that the departure procedures were somewhat efficient. However, the efficiency of the departure procedure was rated higher than arrival procedure ($\bar{x}$ departure = 4.32, $\bar{x}$ arrival = 4.25). All the various procedures involved in the departure process were rated as somewhat efficient level. The first procedure (ground transport to terminal) received the lowest rating ($\bar{x}$ = 4.25) while the movement from the security screening to departure hall was rated the highest The efficiency levels were derived from frequency counts at each efficiency level, and not the mean scores (Table 4.69).

Table 4.69 Efficiency Mean Ranking on Airport Operational Procedures

Rank		Operational Procedures	n	Mean	S.D.	Efficiency Level*	% Counts
8	1.	Airplane to arrival hall (Deplane)	423	4.18	.830	4: Somewhat Efficient	57.7
4	2.	Arrival hall to baggage claim	423	4.33	.790	4: Somewhat Efficient	53.7
5	3.	Baggage claim to public/retails services	423	4.29	.799	4: Somewhat Efficient	51.8
7	4.	Terminal gate to ground transport	423	4.20	.920	4: Somewhat Efficient	53.0
		Mean: Arrival Procedures		***4.25***	***.717***		
6	5.	Ground transport to terminal	423	4.24	.923	4: Somewhat Efficient	46.8
2	6.	Terminal gate to check-in counters	423	4.39	.877	4: Somewhat Efficient	50.1
3	7.	Check-in counters to security screening	423	4.38	.859	4: Somewhat Efficient	48.2
1	8.	Security screening to departure hall	423	4.47	.837	4: Somewhat Efficient	43.5
2	9.	Departure hall to airplane (Enplane)	154	4.39	.938	4: Somewhat Efficient	46.1
		Mean: Departure Procedures		***4.32***	***.692***		
		Grand Mean		**4.26**	**.746**	**4: Somewhat Efficient**	**50.4**

Note: Efficiency levels derived from frequency counts at each efficiency level, not the mean scores.

4.3.5 What Significant Variables of Passengers' Socio-Demographic Profiles Show Different Levels of Efficiency for Thailand Airports' Operational Attributes? (RQ8)

The socio-demographics of interest in the analysis included gender, age, nationality, marital status, religion, education, occupation and income. At 0.05 significant, the socio-demographic characteristics that had significant influence on total efficiency scores included gender (P = .018) and education (P = .012) (Table 4.70). Most of operational attributes demonstrated significant results on gender and nationality. The impact of the socio-demographics variables such as gender on attributes that influence the choice of decisions is vital to service providers including airport operators to understand their market.

Socio-demographic variables that mostly affected to efficiency levels of attributes were gender (12 attributes), nationality (11 attributes), occupation, (5 attributes), and income (5 attributes). Among the significant attributes, broadcasting/announcement showed significant results with 4 variables on socio-demography (i.e., gender, nationality, religion, and income).

Table 4.70 Overall Statistical Testing Results on Socio-Demographic Variables to Efficiency Levels of Airport Operational Attributes

Attributes / Variables	Gender	Age	Nationality	Marital status	Religion	Education	Occupation	Income
1. Accessibility to the airport	.016*	.491	.573	.005*	.280	.470	.083	.624
2. Parking facilities	.787	.144	.150	.885	.042	.056	.168	.018*
3. Seat assignment & waiting area	.025*	.524	.013*	.670	.026	.935	.013*	.629
4. Stairway / lifts / escalators	.088	.663	.551	.578	.343	.220	.089	.203
5. Information desk / counters	.145	.090	.133	.267	.078	.157	.012*	.698
6. Flight information screen	.063	.838	.006*	.515	.063	.040*	.486	.687
7. Broadcasting / announcement	.034*	.109	.000*	.399	.000*	.251	.078	.002*
8. Information signs	.090	.247	.636	.428	.257	.428	.260	.392
9. Airport staff	273	.390	.116	.050	.261	.101	.696	.786
10. Security screening	.325	.233	.705	.867	.679	.213	.078	.038
11. Check-in counters	.587	.800	.144	.211	.148	.571	.024	.379
12. Baggage check-in	.159	.591	.000*	.117	.005*	.113	.187	.089
13. Retail shops	111	.290	.060	.611	.025	.229	.000*	.045
14. Restaurant / eating facilities	.036*	.455	.160	.679	.002	.024*	.000*	.108
15. Departure hall	.360	.420	.224	.421	.094	.083	.000	.043
16. Aerobridges / connecting gate	.571	.833	.003*	.224	.072	.950	.071	.413
17. Passenger steps / airfield buses	.000*	.150	.002*	.647	.001*	.936	.002	.406
18. Arrival hall	.327	.471	.092	.989	.030	.873	.150	.550
19. Baggage claiming system	.192	.285	.049*	.651	.271	.520	.152	.698
20. Baggage belts (arrival)	.134	.185	.064	.511	.275	.256	.153	.631

Table 4.70 (Continued)

Attributes / Variables	Gender	Age	Nationality	Marital status	Religion	Education	Occupation	Income
21.Baggage drop service	.007*	.065	.003*	.925	.092	.469	.138	.871
22.Baggage carts / trolley	.952	.979	.075	.346	.335	.254	.092	.052
23.Tour / hotel services	.008*	.752	.222	.813	.935	.870	.022	.494
24.Car rental facilities / taxi	.140	.295	.004*	.497	.127	.395	.175	.893
25.Safety measures	.023*	.585	.244	.561	.142	.643	.004*	.142
26.Security staff	.872	.699	.347	.347	.490	.325	.011	.119
27.Health services	.010*	.396	.150	.028	.438	.372	.036	.042*
28.Washrooms / toilets	.224	.492	.065	.397	.120	.146	.155	.794
29.Prayer room	.096	.092	.770	.265	.734	.394	.110	.237
30.Banks / exchange services	.014*	.380	.997	.468	.154	.427	.081	.340
31.Post office	.002*	.197	.001*	.254	.000	.744	.028	.003*
32.Public telephone	.003*	.198	.090	.964	.010	.996	.390	.000*
33.Wi-Fi / internet services	.208	.009*	.000*	.120	.000*	.252	.588	.052
Average Efficiency	**.018***	**.024**	**.783**	**.437**	**.593**	**.012***	**.148**	**.675**
Number of significant attributes	**12**	**1**	**11**	**1**	**4**	**2**	**5**	**5**

Note: 0.05 statistical significant level

4.3.5.1 Gender

The gender of the respondent influenced on twelve attributes. Females evaluate all attributes with higher efficiency than males as the accessibility ($\bar{x}$ female = 4.52, $\bar{x}$ males = 4.28, P = .016), seat assignment ($\bar{x}$ female = 4.28, $\bar{x}$ males = 4.07, P = .025), broadcasting ($\bar{x}$ female = 4.36, $\bar{x}$ males = 4.16, P = .034), restaurant ($\bar{x}$ female = 3.79, $\bar{x}$ males = 3.56, P = .036), passenger steps/airfield buses ($\bar{x}$ female = 4.12, $\bar{x}$ males = 3.69, P = .000), baggage drop service ($\bar{x}$ female = 4.23, $\bar{x}$ males = 3.92 P = .007), tour/hotel services ($\bar{x}$ female = 4.16, $\bar{x}$ males = 3.85, P = 0.008), safety measures ($\bar{x}$ female = 4.54, $\bar{x}$ males = 4.31, P = 0.023), health service ($\bar{x}$ female = 4.34, $\bar{x}$ males = 3.96, P = 0.010), bank/exchange services ($\bar{x}$ female = 4.31, $\bar{x}$ males = 4.02, P= 0.014), post office ($\bar{x}$ female = 4.20, $\bar{x}$ males = 3.78, P = .002), and public telephone ($\bar{x}$ female = 4.23, $\bar{x}$ males = 3.83, P = .003) (Table 4.71).

4.3.5.2 Age

An analysis of variance between age and efficiency levels on the airport operational attributes indicates that age impact the rating of Wi-Fi and internet services (Table 4.72). The multiple comparisons between the age groups on efficiency score indicates that there is a significant influence on scoring Wi-Fi among respondents between 31-40 years and 41-50 years old. One of the age categories had less than two cases thus a post Hoc test was not conducted on total importance (Table 4.73). Respondents between 31-40 years rated the efficiency levels of Wi-Fi services lower than respondents between 41-50 years old. This implied that respondents at age 31-40 needed more on Wi-Fi services. However, interview results indicate the great need of the airport to offer clients free Wi-Fi. Most of the interviewees felt that the airports needed to improve on their provision of internet services.

"If the airport can provide free Wi-Fi for passengers, it is good.
You know that most of the people access the internet via their mobile or tablet." (P5)

Table 4.71 Gender Comparison on Efficiency Levels of Operational Attributes

Attributes	Male		Female		t	df	P-value
	$\bar{x}$	SD	$\bar{x}$	SD			
1. Accessibility	4.28	1.103	4.52	.964	-2.410	421	.016*
2. Parking facilities	3.90	1.325	3.93	1.069	-.270	340	.787
3. Seat assignment	4.07	1.076	4.28	.925	-2.248	421	.025*
4. Stairway / lifts / escalators	4.11	1.044	4.28	.923	-1.708	400	.088
5. Information desk	3.98	1.061	4.14	1.005	-1.460	368	.145
6. Flight information screen	4.15	1.031	4.33	.973	-1.865	421	.063
7. Broadcasting	4.16	.962	4.36	1.000	-2126	421	.034*
8. Information signs	4.22	.998	4.38	.938	-1.699	421	.090
9. Airport staff	4.28	1.095	4.39	.934	-1.097	421	273
10. Security screening	4.40	1.144	4.51	1.001	-.984	421	.325
11. Check-in counters	4.54	1.001	4.59	.942	-.543	421	.587
12. Baggage check-in	4.42	.967	4.55	.880	-1.412	421	.159
13. Retail shops	3.66	1.105	3.83	.985	-1.597	394	111
14. Restaurant / eating facilities	3.56	1.122	3.79	1.036	-2.099	387	.036*
15. Departure hall	4.07	1.040	4.16	.865	-.916	421	.360
16. Aerobridges	4.22	.923	4.27	.871	-.567	421	.571
17. Passenger steps / buses	3.69	1.136	4.12	.858	-3.891	322	.000*
18. Arrival hall	4.12	.969	4.21	.869	-.981	421	.327
19. Baggage claiming system	4.21	.914	4.32	.863	-.1.306	421	.192
20. Baggage belts (arrival)	4.14	.943	4.27	.903	-1.500	421	.134
21. Baggage drop service	3.92	1.008	4.23	.956	-2.739	294	.007*
22. Baggage carts / trolley	4.47	.887	4.47	.950	-.060	420	.952
23. Tour / hotel services	3.85	1.081	4.16	.938	-2.651	293	.008*
24. Car rental facilities / taxi	3.97	1.073	4.16	1.104	-1.480	287	.140
25. Safety measures	4.31	1.122	4.54	.954	-2.275	421	.023*
26. Security staff	4.35	1.092	4.36	.945	-.161	421	.872
27. Health services	3.96	1.272	4.34	1.072	-2.592	252	.010*
28. Washrooms / toilets	4.23	1.092	4.36	1.072	-1.217	421	.224
29. Prayer room	3.94	1.247	4.19	.950	-1.670	210	.096
30. Banks / exchange services	4.02	1.100	4.31	.937	-2.484	303	.014*
31. Post office	3.78	1.126	4.20	.945	-3.132	238	.002*
32. Public telephone	3.83	1.162	4.23	1.008	-2.977	259	.003*
33. Wi-Fi / internet services	2.39	1.517	2.58	1.557	-1.260	421	.208
Average Scores	**4.07**	**.664**	**4.22**	**.601**	**-2.382**	**421**	**.018***

Note: t-test at 0.05 statistical significant level

Table 4.72 Analysis of Variance between Age and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.885	.491
2. Parking facilities	1.660	.144
3. Seat assignment	.837	.524
4. Stairway / lifts / escalators	.648	.663
5. Information desk / counters	1.919	.090
6. Flight information screen	.416	.838
7. Broadcasting / announcement	1.812	.109
8. Information signs	1.339	.247
9. Airport staff	1.047	.390
10. Security screening	1.373	.233
11. Check-in counters	.469	.800
12. Baggage check-in	.744	.591
13. Retail shops	1.240	.290
14. Restaurant / eating facilities	.940	.455
15. Departure hall	.995	.420
16. Aerobridges / connecting gate	.423	.833
17. Passenger steps / airfield buses	1.638	.150
18. Arrival hall	.915	.471
19. Baggage claiming system	1.250	.285
20. Baggage belts (arrival)	1.511	.185
21. Baggage drop service	2.100	.065
22. Baggage carts / trolley	.153	.979
23. Tour / hotel services	.533	.752
24. Car rental facilities / taxi	1.230	.295
25. Safety measures	.752	.585
26. Security staff	.602	.699
27. Health services	1.037	.396
28. Washrooms / toilets	.884	.492
29. Prayer room	1.923	.092
30. Banks / exchange services	1.065	.380
31. Post office	1.480	.197
32. Public telephone	1.475	.198
33. Wi-Fi / internet services	3.093	.009*
Total Efficiency	**2.649**	**.024***
(Post Hoc tests were not performed since there were at least one group had fewer than 2 cases.)		

Note: ANOVA test at 0.05 statistical significant level

Table 4.73 Multiple Comparison between Different Age Groups on Efficiency Scores

Attributes		Age Groups					
33. Wi-Fi / internet services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1.11-20 years old	2.40	-	-	-	-	-	-
2.21-30 years old	2.32	-	-	-	-	-	-
3.31-40 years old	2.44	-	-	-	(.835)*	-	-
4.41-50 years old	3.27	-	-	-	-	-	-
5.51-60 years old	2.53	-	-	-	-	-	-
6.61-70 years old	2.83	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.5.3 Nationality

It is hypothesized that people from different nationalities would rate operational attributes different. On average, the nationality did not have a significant impact on the efficiency rating of operational attributes. However, when the attributes are considered individually, the study indicated that the nationality of the respondents influenced their scoring of seat arrangement, flight information screen, broadcasting, baggage check-in, aerobridges, passenger steps, baggage claiming system, baggage drop service and car rental services, post office, and Wi-Fi services.

Attributes were evaluated with the higher efficiency as the eyes of foreigners over the Thais included seat arrangement ($\bar{x}$ foreigner = 4.36, $\bar{x}$ Thais = 4.10 , P = .013), flight information screen ($\bar{x}$ foreigner = 4.45, $\bar{x}$ Thais = 4.16, P = .006), baggage check-in ($\bar{x}$ foreigner = 4.76, $\bar{x}$ Thais = 4.37, P = .000), and baggage claiming system ($\bar{x}$ foreigner = 4.40, $\bar{x}$ Thais = 4.21, P = .049) (Table 4.74).

In opposite, a number of attributes were rated at the lower levels of the foreigners' eyes compared to Thai passengers comprised of broadcasting ($\bar{x}$ foreigner = 4.01, $\bar{x}$ Thais = 4.38, P = .000), aerobridges ($\bar{x}$ foreigner = 4.05, $\bar{x}$ Thais = 4.33, P = .003), passenger steps/airfield buses ($\bar{x}$ foreigner = 3.61, $\bar{x}$ Thais = 4.02, P = .002), baggage drop service ($\bar{x}$ foreigner = 4.37, $\bar{x}$ Thais = 4.39, P = .003), car rental services ($\bar{x}$ foreigner = 3.70, $\bar{x}$ Thais = 4.16, P = .004), post office ($\bar{x}$ foreigner = 3.50, $\bar{x}$ Thais = 4.11, P = .001), and Wi-Fi services ($\bar{x}$ foreigner = 1.83, $\bar{x}$ Thais = 2.78, P = .000).

Table 4.74 Nationality Comparison on Efficiency Levels of Operational Attributes

Attributes	Foreigners		Thais		t	df	P-value
	$\bar{x}$	SD	$\bar{x}$	SD			
1. Accessibility	4.45	1.192	4.39	.963	-.564	421	.573
2. Parking facilities	4.11	1.261	3.87	1.170	-1.444	343	.150
3. Seat assignment	4.36	.976	4.10	1.007	-2.490	421	.013*
4. Stairway / lifts / escalators	4.25	1.070	4.19	.946	-.597	400	.551
5. Information desk	4.21	1.121	4.02	1.000	-1.505	368	.133
6. Flight information screen	4.45	.976	4.16	1.004	-2.755	421	.006*
7. Broadcasting	4.01	1.100	4.38	.911	3.601	421	.000*
8. Information signs	4.34	1.012	4.29	.951	-.474	421	.636
9. Airport staff	4.46	1.111	4.29	.964	-1.576	421	.116
10. Security screening	4.49	1.069	4.45	1.072	-.378	421	.705
11. Check-in counters	4.67	1.048	4.52	.930	-1.465	421	.144
12. Baggage check-in	4.76	.990	4.37	.868	-4.025	421	.000*
13. Retail shops	3.59	1.160	3.81	.991	1.887	394	.060
14. Restaurant / eating facilities	3.56	1.245	3.73	1.008	1.407	387	.160
15. Departure hall	4.03	1.082	4.15	.886	1.216	421	.224
16. Aerobridges	4.05	.959	4.33	.853	3.028	421	.003*
17. Passenger steps / buses	3.61	1.299	4.02	.902	3.079	322	.002*
18. Arrival hall	4.05	.979	4.22	.886	1.691	421	.092
19. Baggage claiming system	4.40	.914	4.21	.872	-1.974	421	.049*
20. Baggage belts (arrival)	4.33	.921	4.15	.920	-1.854	421	.064
21. Baggage drop service	4.37	.976	3.99	.979	-2.963	294	.003*
22. Baggage carts / trolley	4.59	.989	4.42	.882	-1.785	420	.075
23. Tour / hotel services	3.88	1.247	4.05	.940	1.223	293	.222
24. Car rental facilities / taxi	3.70	1.401	4.16	.984	2.898	287	.004*
25. Safety measures	4.34	1.115	4.47	1.007	1.167	421	.244
26. Security staff	4.29	.986	4.39	1.028	.941	421	.347
27. Health services	3.96	1.473	4.22	1.054	1.445	252	.150
28. Washrooms / toilets	4.44	1.124	4.23	1.058	-1.848	421	.065
29. Prayer room	4.13	1.477	4.07	1.025	-.293	210	.770
30. Banks / exchange services	4.17	1.190	4.17	.969	.004	303	.997
31. Post office	3.50	1.331	4.11	.958	3.388	238	.001*
32. Public telephone	3.79	1.301	4.10	1.047	1.702	259	.090
33. Wi-Fi / internet services	1.83	1.173	2.78	1.592	6.085	421	.000*
Average Scores	**4.16**	**0.662**	**4.14**	**0.623**	**-.276**	**421**	**.783**

Note: t-test at 0.05 statistical significant level

4.3.5.4 Marital status

Marital status is a vital demographic characteristic that influence customer behaviors. In order to assess the impact of marital status on rating the efficiency level and operational attributes, an analysis of variance was conducted (F= 0.05) (Table 4.75). According to the analysis, marital status did not have a significant impact on the scoring of total efficiency. However, marital status impacted the scoring of the health services (F =3.624, P = .028) and accessibility to the airport (F = 5.354, P = .005). Post Hoc analysis indicates that single respondents rated accessibility less efficient than married couples ($\bar{x}$ single = 4.28, $\bar{x}$ married couples = 4.63) whereas significant differences between groups were not found on health services (Table 4.76).

Table 4.75 Analysis of Variance between Marital Status and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	5.354	.005*
2. Parking facilities	.123	.885
3. Seat assignment	.400	.670
4. Stairway / lifts / escalators	.550	.578
5. Information desk / counters	1.326	.267
6. Flight information screen	.664	.515
7. Broadcasting / announcement	.920	.399
8. Information signs	.851	.428
9. Airport staff	3.024	.050
10. Security screening	.143	.867
11. Check-in counters	1.563	.211
12. Baggage check-in	2.159	.117
13. Retail shops	.494	.611
14. Restaurant / eating facilities	.387	.679
15. Departure hall	.867	.421
16. Aerobridges / connecting gate	1.504	.224
17. Passenger steps / airfield buses	.436	.647
18. Arrival hall	.011	.989
19. Baggage claiming system	.430	.651
20. Baggage belts (arrival)	.673	.511
21. Baggage drop service	.078	.925
22. Baggage carts / trolley	1.063	.346
23. Tour / hotel services	.207	.813
24. Car rental facilities / taxi	.701	.497
25. Safety measures	.580	.561

Table 4.75 (Continued)

Attributes	F	P-value
26. Security staff	1.061	.347
27. Health services *(Significant differences between groups were not found)*	3.624	.028*
28. Washrooms / toilets	.926	.397
29. Prayer room	1.335	.265
30. Banks / exchange services	.761	.468
31. Post office	1.378	.254
32. Public telephone	.037	.964
33. Wi-Fi / internet services	2.129	.120
Total Efficiency	**.832**	**.437**

Note: ANOVA test at 0.05 significant level

Table 4.76 Multiple Comparison between Different Marital Status on Efficiency Scores

Attributes		Marital Status		
1. Accessibility	$\bar{x}$	**1** Single	**2** Married	**3** Divorced
1 Single	4.28	-	**(**.347)*****	-
2 Married	4.63	-	-	-
3 Divorced	4.44	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.5.5 Religion

Overall, religion does not influence the efficiency scoring of airport operation attributes (F = .742, P = .593). However, individual attribute analysis indicates that religion impacted scoring of the parking facilities (SS= 2.212, P = .042), seat arrangement (F = 2.422, P = .026), broadcasting (F = 4.361, P = .000), baggage check-in (F = 3.163, P = .005), retail shops (F = 2.436, P = .025), restaurant (F = 3.559, P = .002), and passenger steps (F = 4.122, P = .001), arrival hall (F = 2.355, P = .030), post office (F = 5.919, P = .000), pubic telephone (F = 2.883, P = .010), and Wi-Fi services (F = 7.184 P = .000) (Table 4.77).

Table 4.77 Analysis of Variance between Religions and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.250	.280
2. Parking facilities *(Significant differences between groups were not found)*	2.212	.042*
3. Seat assignment *(Significant differences between groups were not found)*	2.422	.026*
4. Stairway / lifts / escalators	1.132	.343
5. Information desk / counters	1.912	.078
6. Flight information screen	2.010	.063
7. Broadcasting / announcement	4.361	.000*
8. Information signs	1.297	.257
9. Airport staff	1.290	.261
10. Security screening	.663	.679
11. Check-in counters	1.590	.148
12. Baggage check-in	3.163	.005*
13. Retail shops *(Significant differences between groups were not found)*	2.436	.025*
14. Restaurant / eating facilities *(Significant differences between groups were not found)*	3.559	.002*
15. Departure hall	1.820	.094
16. Aerobridges / connecting gate	1.949	.072
17. Passenger steps / airfield buses	4.122	.001*
18. Arrival hall *(Significant differences between groups were not found)*	2.355	.030*
19. Baggage claiming system	1.269	.271
20. Baggage belts (arrival)	1.260	.275
21. Baggage drop service	1.835	.092
22. Baggage carts / trolley	1.146	.335
23. Tour / hotel services	.303	.935
24. Car rental facilities / taxi	1.677	.127
25. Safety measures	1.611	.142
26. Security staff	.907	.490
27. Health services	.982	.438
28. Washrooms / toilets	1.696	.120
29. Prayer room	.556	.734
30. Banks / exchange services	1.577	.154
31. Post office *(Significant differences between groups were not found)*	5.919	.000*
32. Public telephone *(Significant differences between groups were not found)*	2.883	.010*
33. Wi-Fi / internet services	7.184	.000*
Total Efficiency	**.742**	**.593**

Note: F-test at 0.05 significant level

Inter-religion comparison indicates that Christians rated broadcasting, passenger buses, and Wi-Fi as less efficient than Buddhists. On baggage check-in, irreligion rated baggage check-in as more efficient than Hindus. On Wi-Fi services, irreligion persons and Christians rated Wi-Fi as less efficient than Buddhists (Table 4.78).

Table 4.78 Multiple Comparison between Different Religions on Efficiency Scores

Attributes		Religion Groups						
7. Broadcasting	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	4.67	-	-	-	-	-	-	-
2 Buddhism	4.36	-	-	(.525)*	-	-	-	-
3 Christianity	3.83	-	-	-	-	-	-	-
4 Islam	4.43	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.19	-	-	-	-	-	-	-
7 Others	3.44	-	-	-	-	-	-	-
12. Baggage check-in	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	4.67	-	-	-	-	-	(.041)*	-
2 Buddhism	4.38	-	-	-	-	-	-	-
3 Christianity	4.68	-	-	-	-	-	-	-
4 Islam	4.51	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	4.91	-	-	-	-	-	-	-
7 Others	5.00	-	-	-	-	-	-	-
17. Passenger steps / buses	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	5.00	-	-	-	-	-	-	-
2 Buddhism	4.00	-	-	(.661)*	-	-	-	-
3 Christianity	3.34	-	-	-	-	-	-	-
4 Islam	3.66	-	-	-	-	-	-	-
5 Sikh	5.50	-	-	-	-	-	-	-
6 Irreligion	3.84	-	-	-	-	-	-	-
7 Others	4.50	-	-	-	-	-	-	-

Table 4.78 (Continued)

Attributes		Religion Groups						
33. Wi-Fi / internet services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 Brahmanism/Hinduism	1.67	-	-	-	-	-	-	-
2 Buddhism	2.81	-	-	(.883)*	(.923)*	-	(1.190)*	-
3 Christianity	1.93	-	-	-	-	-	-	-
4 Islam	1.89	-	-	-	-	-	-	-
5 Sikh	3.00	-	-	-	-	-	-	-
6 Irreligion	1.63	-	-	-	-	-	-	-
7 Others	1.67	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

Religion influence the trustworthiness and brand credibility, perceived quality and brand credibility, customer loyalty, and shopping behaviors. The correlation is based on the concept that religion is an essential part of the culture, and culture influence shape values and behaviors (Alam, Arshad, & Shabbir, 2012). This correlation can be extended to how consumers view and rate the quality of services and the efficiency of the airport.

4.3.5.6 Education

An analysis of variance indicated that there is a significant difference between respondents of different academic levels (F = 3.92, P = .012). Education level influenced the scoring of flight information (F = 6.64, P = .040) and eating facilities (F = 8.684, P = .024). The multiple comparisons indicated that respondents with a bachelor degree ($\bar{x}$ = 4.34) rated total efficiency lower than those who were educated below bachelor degree ($\bar{x}$ = 4.43), significantly (Table 4.79).

Table 4.79 Analysis of Variance between Education and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.756	.470
2. Parking facilities	2.910	.056
3. Seat assignment	.067	.935
4. Stairway / lifts / escalators	1.519	.220
5. Information desk / counters	1.864	.157
6. Flight information screen	3.244	.040*
7. Broadcasting / announcement	1.386	.251
8. Information signs	.849	.428
9. Airport staff	2.309	.101
10. Security screening	1.551	.213
11. Check-in counters	.562	.571
12. Baggage check-in	2.192	.113
13. Retail shops	1.478	.229
14. Restaurant / eating facilities	3.766	.024*
15. Departure hall	2.506	.083
16. Aerobridges / connecting gate	.051	.950
17. Passenger steps / airfield buses	.066	.936
18. Arrival hall	.135	.873
19. Baggage claiming system	.655	.520
20. Baggage belts (arrival)	1.365	.256
21. Baggage drop service	.759	.469
22. Baggage carts / trolley	1.376	.254
23. Tour / hotel services	.139	.870
24. Car rental facilities / taxi	.933	.395
25. Safety measures	.442	.643
26. Security staff	1.126	.325
27. Health services	.991	.372
28. Washrooms / toilets	1.932	.146
29. Prayer room	.937	.394
30. Banks / exchange services	.854	.427
31. Post office	.296	.744
32. Public telephone	.004	.996
33. Wi-Fi / internet services	1.384	.252
Total Efficiency	**4.561**	**.012***

Note: ANOVA test at 0.05 significant level

Individual tests on attributes found that respondents with an academic level above bachelor degree level were concerned about the quality of the flight information screen ($\bar{x}$ = 4.14), than those with education level below bachelor degree ($\bar{x}$ = 4.51). However, ones who get above bachelor degree ($\bar{x}$ = 3.88). more satisfied with the efficiency levels of restaurants/eating facilities compared to those with education below bachelor degree ($\bar{x}$ = 3.42) (Table 4.80).

Table 4.80 Multiple Comparison between Different Educational Levels on Efficiency Scores

Attributes		**Educational Levels**		
6. Flight information screen	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	4.51	-	-	**(**.373)*
2 Bachelor degree	4.22	-	-	-
3 Above bachelor degree	4.14	-	-	-
14. Restaurant / eating facilities	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	3.42	-	-	**(.**452)*
2 Bachelor degree	3.67	-	-	-
3 Above bachelor degree	3.88	-	-	-
Total Efficiency	**$\bar{x}$**	**1**	**2**	**3**
1 Below bachelor degree	4.43	-	(.344)*	-
2 Bachelor degree	4.34	-	-	-
3 Above bachelor degree	4.22	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.5.7 Occupation

Occupation does not impact the rating of both the total importance and total efficiency of airport attributes. However, the analysis of variance on operational attributes' efficiency indicates that occupation impact attitude toward seat assignment, information desk, check-in counters, retail shops, eating facilities, departure hall, passenger steps/airfield buses, tour/hotels services, safety measures, security staff, health services, and post office (Table 4.81). Business owners were concerned about the seat assignment ($\bar{x}$ = 3.90) than housewives ($\bar{x}$ = 5.40). On information desk, housewives ($\bar{x}$ = 5.50) rated the efficiency of information desk superior than temporary workers ($\bar{x}$ = 3.60).

Table 4.81 Analysis of Variance between Occupation and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.813	.083
2. Parking facilities	1.495	.168
3. Seat assignment	2.590	.013*
4. Stairway / lifts / escalators	1.786	.089
5. Information desk / counters	2.626	.012*
6. Flight information screen	.925	.486
7. Broadcasting / announcement	1.840	.078
8. Information signs	1.277	.260
9. Airport staff	.671	.696
10. Security screening	1.839	.078
11. Check-in counters *(Significant differences between groups were not found)*	2.327	.024*
12. Baggage check-in	1.441	.187
13. Retail shops	4.465	.000*
14. Restaurant / eating facilities	4.040	.000*
15. Departure hall *(Significant differences between groups were not found)*	4.188	.000*
16. Aerobridges / connecting gate	1.880	.071*
17. Passenger steps / buses *(Significant differences between groups were not found)*	3.255	.002*
18. Arrival hall	1.547	.150
19. Baggage claiming system	1.539	.152
20. Baggage belts (arrival)	1.537	.153
21. Baggage drop service	1.589	.138
22. Baggage carts / trolley	1.769	.092
23. Tour / hotel services *(Significant differences between groups were not found)*	2.386	.022*
24. Car rental facilities / taxi	1.479	.175
25. Safety measures	3.076	.004*
26. Security staff *(Significant differences between groups were not found)*	2.661	.011*
27. Health services *(Significant differences between groups were not found)*	2.187	.036*
28. Washrooms / toilets	1.530	.155
29. Prayer room	1.703	.110
30. Banks / exchange services	1.834	.081
31. Post office *(Significant differences between groups were not found)*	2.291	.028*
32. Public telephone	1.059	.390
33. Wi-Fi / internet services	.799	.588
Total Efficiency	**1.565**	**.148**

Note: ANOVA test at 0.05 significant level

In addition, temporary workers ($\bar{x}$ = 2.96) rated retail shops to be lower efficient than business owners ($\bar{x}$ = 3.85), civil servants ($\bar{x}$ = 4.01), and private business employees ($\bar{x}$ = 3.70). Temporary workers ($\bar{x}$ = 3.04) also rated eating facilities to be lower efficient than civil servants ($\bar{x}$ = 3.93) and housewives ($\bar{x}$ = 4.80).

The finding adds to the debate whether occupation is an important socio-demographic characteristic in assessing consumer perceptions. Jusoh and Ling (2012) concluded that there is no significance difference in consumer attitudes among different occupation groups. However, in the study of service assurance perception in Bank of India, Jain (2013) reported that qualification and occupation are vital characteristics that influence the service assurance perception most (Table 4.82).

4.3.5.8 Income

Analysis of variance between income and efficiency level on airport operational attributes indicate income does not impact the rating of the efficiency of total efficiency. However, income impacted the rating of post office (P = .003), public telephone (P = .000), health services (P = .042), departure hall (P = .043), retail shops (P = .045), broadcasting (P = .002), security screening (P =.038), and parking facilities (P = .018) (Table 4.83).

As F-test multiple comparison, the study indicated a significant correlation between respondents earning between 40,001 to 60,000 THB ($\bar{x}$ = 3.56) and the respondents earning between 80,001-100,000 THB ($\bar{x}$ = 4.79) on parking facilities. Broadcasting was rated differently by individuals earning less than 20,001 THB ($\bar{x}$ = 4.51), 20,001-40,000 THB ($\bar{x}$ = 4.42), and more than 100,000 THB ($\bar{x}$ = 3.96). In addition, respondents earning more than 100,000 THB showed significant differences among other income groups with lower efficiency scores on post office and public telephone (Table 4.84).

Table 4.82 Multiple Comparison between Different Occupation on Efficiency Scores

Attributes		Occupation							
3. Seat assignment	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	4.36	-	-	-	-	-	-	-	-
2 Business owner	3.90	-	-	-	(1.496)*	-	-	-	-
3 Private business employee	4.14	-	-	-	-	-	-	-	-
4 Housewife	5.40	-	-	-	-	-	-	-	-
5 Student	4.15	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	3.97	-	-	-	-	-	-	-	-
7 Retired	4.40	-	-	-	-	-	-	-	-
8 Unemployed	4.60	-	-	-	-	-	-	-	-
5. Information desk / counters	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	4.18	-	-	-	-	-	-	-	-
2 Business owner	3.98	-	-	-	-	-	-	-	-
3 Private business employee	4.02	-	-	-	-	-	-	-	-
4 Housewife	5.50	-	-	-	-	-	-	-	-
5 Student	4.12	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	3.60	-	-	-	(1.900)*	-	-	-	-
7 Retired	4.67	-	-	-	-	-	-	-	-
8 Unemployed	4.67	-	-	-	-	-	-	-	-
13. Retail shops	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	4.01	-	-	-	-	-	-	-	-
2 Business owner	3.85	-	-	-	-	-	-	-	-
3 Private business employee	3.70	-	-	-	-	-	-	-	-
4 Housewife	4.80	-	-	-	-	-	-	-	-
5 Student	3.67	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	2.96	(1.046)*	(.882)*	(.732)*	-	(1.836)*	-	-	-
7 Retired	3.57	-	-	-	-	-	-	-	-
8 Unemployed	3.25	-	-	-	-	-	-	-	-

Table 4.82 (Continued)

Attributes	Occupation								
14. Restaurant / eating facilities	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	3.93	-	-	-	-	-	-	-	-
2 Business owner	3.71	-	-	-	-	-	-	-	-
3 Private business employee	3.66	-	-	-	-	-	-	-	-
4 Housewife	4.80	-	-	-	-	-	-	-	-
5 Student	3.33	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	3.04	(.891)*	-	-	(1.760)*	-	-	-	-
7 Retired	3.14	-	-	-	-	-	-	-	-
8 Unemployed	4.50	-	-	-	-	-	-	-	-
25. Safety measures	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1 Civil servant	4.56	-	-	-	-	-	-	-	-
2 Business owner	4.19	-	-	-	-	-	-	-	-
3 Private business employee	4.53	-	-	-	-	-	-	-	-
4 Housewife	5.00	-	-	-	-	-	-	-	-
5 Student	4.38	-	-	-	-	-	-	-	-
6 Temporary worker/freelance	3.77	(.790)*	-	(.764)*	-	-	-	-	-
7 Retired	4.20	-	-	-	-	-	-	-	-
8 Unemployed	4.80	-	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

Table 4.83 Analysis of Variance between Income and Importance Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.700	.624
2. Parking facilities	2.786	.018*
3. Seat assignment	.693	.629
4. Stairway / lifts / escalators	1.458	.203
5. Information desk / counters	.602	.698
6. Flight information screen	.617	.687
7. Broadcasting / announcement	3.829	.002*
8. Information signs	1.043	.392
9. Airport staff	.487	.786
10. Security screening *(Significant differences between groups were not found)*	2.381	.038*
11. Check-in counters	1.065	.379
12. Baggage check-in	1.930	.089
13. Retail shops *(Significant differences between groups were not found)*	2.295	.045*
14. Restaurant / eating facilities	1.823	.108
15. Departure hall *(Significant differences between groups were not found)*	2.324	.043*
16. Aerobridges / connecting gate	1.008	.413
17. Passenger steps / airfield buses	1.021	.406
18. Arrival hall	.800	.550
19. Baggage claiming system	.602	.698
20. Baggage belts (arrival)	.691	.631
21. Baggage drop service	.368	.871
22. Baggage carts / trolley	2.223	.052
23. Tour / hotel services	.882	.494
24. Car rental facilities / taxi	.333	.893
25. Safety measures	1.669	.142
26. Security staff	1.766	.119
27. Health services	2.359	.042*
28. Washrooms / toilets	.476	.794
29. Prayer room	1.374	.237
30. Banks / exchange services	1.139	.340
31. Post office	3.775	.003*
32. Public telephone	4.760	.000*
33. Wi-Fi / internet services	2.225	.052
Total Efficiency	**.633**	**.675**

Note: ANOVA test at 0.05 significant level

Table 4.84 Multiple Comparison between Income Groups on Efficiency Scores

Attributes		Income Groups					
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.09	-	-	-	-	-	-
2 20,001-40,000 THB	3.91	-	-	-	-	-	-
3 40,001-60,000 THB	3.56	-	-	-	-	(1.227)*	-
4 60,001-80,000 THB	3.58	-	-	-	-	-	-
5 80,001-100,000 THB	4.79	-	-	-	-	-	-
6 More than 100,000 THB	3.85	-	-	-	-	-	-
7. Broadcasting	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.51	-	-	-	-	-	-
2 20,001-40,000 THB	4.42	-	-	-	-	-	-
3 40,001-60,000 THB	4.29	-	-	-	-	-	-
4 60,001-80,000 THB	3.77	-	-	-	-	-	-
5 80,001-100,000 THB	4.00	-	-	-	-	-	-
6 More than 100,000 THB	3.96	(.550)*	(.456)*	-	-	-	-
27. Health services	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.14	-	-	-	-	-	-
2 20,001-40,000 THB	4.31	-	-	-	-	-	-
3 40,001-60,000 THB	4.26	-	-	-	-	-	-
4 60,001-80,000 THB	3.75	-	-	-	-	-	-
5 80,001-100,000 THB	3.42	-	-	-	-	-	-
6 More than 100,000 THB	4.69	-	-	-	-	(1.271)*	-
31. Post office	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.17	-	-	-	-	-	-
2 20,001-40,000 THB	4.22	-	-	-	-	-	-
3 40,001-60,000 THB	4.00	-	-	-	-	-	-
4 60,001-80,000 THB	3.88	-	-	-	-	-	-
5 80,001-100,000 THB	3.55	-	-	-	-	-	-
6 More than 100,000 THB	3.08	(1.093)*	(1.145)*	-	-	-	-
32. Public telephone	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 Less than 20,001 THB	4.11	-	-	-	-	-	-
2 20,001-40,000 THB	4.23	-	-	-	-	-	-
3 40,001-60,000 THB	4.04	-	-	-	-	-	-
4 60,001-80,000 THB	3.89	-	-	-	-	-	-
5 80,001-100,000 THB	4.42	-	-	-	-	-	-
6 More than 100,000 THB	2.93	(1.176)*	(1.293)*	(1.110)*	-	(1.483)*	-

Note: F-test (mean differences) at 0.05 significant level

4.3.6 What Significant Variables of Passengers' Travel Experiences Show Different Levels of Efficiency for Thailand Airports' Operational Attributes? (RQ9)

This question sought to understand whether passengers' travel experiences show different levels of efficiency for Thailand airport operational attributes. Passenger travel experiences were broadly categorized into experiences on-site, accompanying groups, experience of the air transport and experience of airports. Each of the four categories had three to four sub-sets that were analyzed against the 33 attributes. Although the overall passengers' variables do not influence the rating of efficiency, they influence that rating of various individual attributes.

Experience on sites that included times the province was visited and the transport used to get to the airport, influenced 5 and 1 attributes, orderly. The accompanying group that included the accompanying people, number of accompanying people and travel arrangement influenced 5, 1, and 1 attributes, respectively. In terms of experiences of air transport, proxies on most frequently used airlines and experiences of domestic LCC flight per year demonstrated significant results on 3 and 2 attributes. All of the above, experiences of airports illustrated the highest numbers of significant attributes at 16 attributes altogether (Table 4.85).

Therefore, experience of the airports has the greatest influence on the rating of the efficiency of airport attributes. In addition, there was a common trend on the attributes affected by the passengers' travel experience. Passengers' experience impacts the efficiency of retail shops, baggage drop service, tour/hotel services, car rental facilities, and Wi-Fi services.

4.3.6.1 Experiences on-site

1) Main purpose of the trip

An analysis of variance between the main purpose of the trip and the efficiency levels on the airport operational attributes indicated there was no significant difference between the various travel experiences and total efficiency of airport attributes ($F = .910$, $P = .476$) (Table 4.86). However, a significant difference

Table 4.85 Overall Statistical Testing Results on Travel Experiences' Variables to Efficiency Levels of Airport Operational Attributes

Attributes / Variables	Experiences on-site*			Accompanying groups*			Experience of air transport*			Experience of airports*			
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Accessibility to the airport	.946	.395	.919	.002*	.050	.650	.228	.678	.657	.285	.402	.494	.394
2. Parking facilities	.361	.033	.534	.024*	.449	.618	.027	.033	.001*	.000*	.001*	.108	.014
3. Seat assignment & waiting area	.194	.008	.123	.120	.095	.071	.746	.001*	.000*	.000*	.001*	.001*	.210
4. Stairway / lifts / escalators	.062	.290	.831	.914	.647	.110	.177	.068	.026	.212	.001*	.303	.491
5. Information desk / counters	.279	.029	.201	.606	.725	.397	.147	.492	.073	.156	.026*	.010*	.605
6. Flight information screen	.772	.965	.088	.389	.310	.206	.359	.054	.223	.449	.006*	.004*	.497
7. Broadcasting / announcement	.980	.171	.830	.218	.398	.438	.198	.225	.382	.305	.135	.442	.342
8. Information signs	.462	.353	.547	.795	.489	.570	.667	.560	.099	.005*	.013*	.011*	.020
9. Airport staff	.330	.047	.461	.582	.093	.558	.234	.550	.008	.020*	.011	.112	.333
10. Security screening	.661	.888	.360	.630	.431	.240	.321	.429	.106	.055	.100	.253	.026*
11. Check-in counters	.900	.770	.819	.086	.813	.329	.449	.222	.442	.198	.005*	.081	.016*
12. Baggage check-in	.009	.031	.818	.003*	.021*	.275	.573	.259	.128	.018	.001*	.079	.060
13. Retail shops	.134	.006*	.769	.769	.662	.661	.350	.658	.915	.822	.579	.047	.001*
14. Restaurant / eating facilities	.570	.024	.966	.378	.380	.658	.307	.122	.546	.680	.328	.289	.145
15. Departure hall	.228	.919	.091	.258	.962	.863	.357	.866	.917	.626	.105	.669	.570
16. Aerobridges / connecting gate	.564	.375	.945	.714	.863	.038*	.010	.234	.798	.928	.140	.453	.570
17. Passenger steps / airfield buses	.449	.310	.151	.162	.368	.411	.293	.720	.852	.535	.275	.863	.783
18. Arrival hall	.222	.572	.507	.532	.635	.488	.160	.595	.875	.313	.094	.612	.147
19. Baggage claiming system	.452	.407	.408	.162	.787	.569	.056	.005*	.094	.000*	.003*	.193	.148
20. Baggage belts (arrival)	.551	.364	.220	.038	.524	.651	.129	.070	.225	.013*	.018	.355	.646
21. Baggage drop service	.815	.034*	.013*	.139	.414	.234	.050	.057	.031	.000*	.001*	.756	.879
22. Baggage carts / trolley	.887	.642	.168	.608	.439	.691	.411	.339	.531	.226	.381	.504	.162

Table 4.85 (Continued)

Attributes / Variables	Experiences on-site*			Accompanying groups*			Experience of air transport*			Experience of airports*			
	1	2	3	4	5	6	7	8	9	10	11	12	13
23. Tour / hotel services	.784	.040*	.004	.684	.683	.601	.182	.112	.859	.509	.795	.200	.691
24. Car rental facilities / taxi	.881	.010*	.009	.051	.124	.069	.117	.692	.417	.743	.734	.885	.590
25. Safety measures	.973	.499	.819	.383	.103	.892	.255	.168	.605	.012	.165	.505	.228
26. Security staff	.473	.638	.419	.489	.561	.250	.534	.588	.194	.013*	.154	.355	.195
27. Health services	.939	.732	.604	.636	.989	.313	.305	.553	.816	.180	.282	.545	.322
28. Washrooms / toilets	.309	.745	.179	.800	.738	.341	.642	.750	.086	.035	.136	.546	.046
29. Prayer room	.892	.650	.115	.005*	.236	.150	.258	.246	.202	.713	.293	.422	.229
30. Banks / exchange services	.881	.885	.204	.612	.996	.459	.631	.964	.845	.425	.629	.017	.383
31. Post office	.263	.253	.003*	.224	.562	.156	.171	.103	.520	.771	.070	.143	.108
32. Public telephone	.672	.109	.141	.200	.710	.333	.516	.250	.714	.309	.412	.439	.145
33. Wi-Fi / internet services	.113	.010*	.337	.025*	.039	.919	.048	.000*	.010	.042*	.012	.020*	.149
Average Efficiency	**.476**	**.470**	**.226**	**.666**	**.961**	**.086**	**.153**	**.945**	**.933**	**.288**	**.428**	**.528**	**.564**
Number of significant attributes	**0**	**5**	**2**	**5**	**1**	**1**	**0**	**3**	**2**	**9**	**10**	**5**	**3**

Note: 1 = Main purpose of the trip; 2 = Times the province was visited per year; 3 = Transport used to get to the province; 4 = Accompanying people; 5 = Number of accompanying people; 6 = Travel arrangements; 7 = Reasons of choosing LCC; 8 = Most frequently used airlines; 9 = Experience of domestic LCC flight per year; 10 = Numbers of arrivals and departures at the airport; 11 = Numbers of times flying with LCC at the airport; 12 = Average time used on departure; 13 = Average time used on arrival

was observed in the baggage-check-in attribute (F = 3.120, P = .009) but the difference between groups in the multiple comparisons analysis was not significant.

Table 4.86 Analysis of Variance between Main Purpose of the Trip and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.237	.946
2. Parking facilities	1.099	.361
3. Seat assignment	1.482	.194
4. Stairway / lifts / escalators	2.125	.062
5. Information desk / counters	1.263	.279
6. Flight information screen	.506	.772
7. Broadcasting / announcement	.151	.980
8. Information signs	.928	.462
9. Airport staff	1.156	.330
10. Security screening	.651	.661
11. Check-in counters	.321	.900
12. Baggage check-in *(Significant differences between groups were not found)*	3.120	.009*
13. Retail shops	1.700	.134
14. Restaurant / eating facilities	.773	.570
15. Departure hall	1.387	.228
16. Aerobridges / connecting gate	.780	.564
17. Passenger steps / airfield buses	.949	.449
18. Arrival hall	1.402	.222
19. Baggage claiming system	.945	.452
20. Baggage belts (arrival)	.799	.551
21. Baggage drop service	.447	.815
22. Baggage carts / trolley	.343	.887
23. Tour / hotel services	.490	.784
24. Car rental facilities / taxi	.351	.881
25. Safety measures	.172	.973
26. Security staff	.912	.473
27. Health services	.252	.939
28. Washrooms / toilets	1.199	.309
29. Prayer room	.333	.892
30. Banks / exchange services	.351	.881
31. Post office	1.304	.263
32. Public telephone	.637	.672
33. Wi-Fi / internet services	1.795	.113
Total Efficiency	**.910**	**.476**

Note: ANOVA test at 0.05 significant level

2) Times the province was visited per year

The frequency of visiting airports does not impact the total efficiency of operational attributes (F = .937, P = .470). However, the number of travels the respondents visited the airport impacted various variables including Wi-Fi services (F = 2.833, P = .010). The between groups difference was observed among those who visited airport the first time. First time visitors ($\bar{x}$ = 1.94) felt the airports should provide free internet services to passengers that is different from 1-2 time visitors ($\bar{x}$ = 2.68) and more than 10 times visitors ($\bar{x}$ = 2.72) (Table 4.87).

The frequency also impacted car rental facilities (F =2.862, P = .010), baggage drop service (F =2.317, P = .034), eating facilities (F =2.455, P = .024) and retail shops (F =3.099, P = .006), baggage check-in (F = 2.337, P = .031) and airport staff (F =2.146, P = .047). The post hoc analysis indicates that first-time visitors were also concerned with retail shops, car rental services and Wi-Fi. They rated these services as lower efficient compared to those with higher experiences (Table 4.88).

Table 4.87 Analysis of Variance between Times Visiting the Provinces and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.046	.395
2. Parking facilities *(Significant differences between groups were not found)*	2.324	.033*
3. Seat assignment *(Significant differences between groups were not found)*	2.967	.008*
4. Stairway / lifts / escalators	1.230	.290
5. Information desk / counters *(Significant differences between groups were not found)*	2.382	.029*
6. Flight information screen	.234	.965
7. Broadcasting / announcement	1.518	.171
8. Information signs	1.114	.353
9. Airport staff *(Significant differences between groups were not found)*	2.146	.047*
10. Security screening	.386	.888
11. Check-in counters	.550	.770
12. Baggage check-in *(Significant differences between groups were not found)*	2.337	.031*
13. Retail shops	3.099	.006*
14. Restaurant / eating facilities *(Significant differences between groups were not found)*	2.455	.024*
15. Departure hall	.335	.919
16. Aerobridges / connecting gate	1.078	.375
17. Passenger steps / airfield buses	1.193	.310
18. Arrival hall	.798	.572
19. Baggage claiming system	1.026	.407
20. Baggage belts (arrival)	1.096	.364

Table 4.87 (Continued)

Attributes	F	P-value
21. Baggage drop service	2.317	.034*
22. Baggage carts / trolley	.709	.642
23. Tour / hotel services	2.232	.040*
24. Car rental facilities / taxi	2.862	.010*
25. Safety measures	.894	.499
26. Security staff	.715	.638
27. Health services	.597	.732
28. Washrooms / toilets	.581	.745
29. Prayer room	.700	.650
30. Banks / exchange services	.391	.885
31. Post office	1.311	.253
32. Public telephone	1.753	.109
33. Wi-Fi / internet services	2.833	.010*
Total Efficiency	**.937**	**.470**

Note: ANOVA test at 0.05 significant level

Table 4.88 Multiple Comparison between Times Visiting the Provinces on Efficiency Scores

Attributes		Times Visiting the Provinces						
13. Retail shops	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.43	-	-	(1.558)*	-	-	-	-
2 1-2 times / year	3.89	-	-	-	-	-	-	-
3 3-4 times / year	3.99	-	-	-	-	-	-	-
4 5-6 times / year	3.48	-	-	-	-	-	-	-
5 7-8 times / year	3.67	-	-	-	-	-	-	-
6 9-10 times / year	3.31	-	-	-	-	-	-	-
7 More than 10 times / year	3.81	-	-	-	-	-	-	-
21. Baggage drop service	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	4.24	-	-	-	-	-	-	-
2 1-2 times / year	4.16	-	-	-	-	-	-	-
3 3-4 times / year	4.28	-	-	-	-	-	-	-
4 5-6 times / year	3.94	-	-	-	-	-	-	-
5 7-8 times / year	4.00	-	-	-	-	-	-	-
6 9-10 times / year	4.15	-	-	-	-	-	-	-
7 More than 10 times / year	3.70	-	-	(.756)*	-	-	-	-
22. 23. Tour / hotel services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.67	-	-	-	-	-	-	-
2 1-2 times / year	4.05	-	-	-	-	-	-	-
3 3-4 times / year	4.15	-	-	-	-	-	-	-
4 5-6 times / year	3.84	-	-	-	-	-	-	-
5 7-8 times / year	3.60	-	-	-	-	-	-	-
6 9-10 times / year	3.83	-	-	-	-	-	-	-
7 More than 10 times / year	4.28	(.602)*	-	-	-	-	-	-

Table 4.88 (Continued)

Attributes	Times Visiting the Provinces							
24. Car rental facilities / taxi	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	3.45	-	(.675)*	(.845)*	-	-	-	-
2 1-2 times / year	4.13	-	-	-	-	-	-	-
3 3-4 times / year	4.30	-	-	-	-	-	-	-
4 5-6 times / year	4.15	-	-	-	-	-	-	-
5 7-8 times / year	4.30	-	-	-	-	-	-	-
6 9-10 times / year	4.00	-	-	-	-	-	-	-
7 More than 10 times / year	4.14	-	-	-	-	-	-	-
33. Wi-Fi / internet services	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 First visiting	1.94	-	(.731)*	-	-	-	-	(.772)*
2 1-2 times / year	2.68	-	-	-	-	-	-	-
3 3-4 times / year	2.66	-	-	-	-	-	-	-
4 5-6 times / year	2.24	-	-	-	-	-	-	-
5 7-8 times / year	2.67	-	-	-	-	-	-	-
6 9-10 times / year	2.44	-	-	-	-	-	-	-
7 More than 10 times / year	2.72	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Transport used to get to the province

The relative convenience of airports serving region is documented as one of the key determinants of air passengers' airport choice. Airport ground access models play an important role in studies addressing how future air travel demand will be distributed among airports in multi-airport region such as Thailand. The ANOVA analysis between the commonly used transport means and the total efficiency level on the airport operational attributes do not indicate significance difference between the various mode of transport (F = 1.402, P = .226). However, individual attributes: baggage drop service, tour/hotel services, car rental facilities, and post office had significant differences shown (Table 4.89).

The post hoc test indicated that the mode of transportation impact the rating of only baggage drop services. According to the analysis, there was a significant between group difference respondents who use rental cars ($\bar{x}$ = 5.67). and the low-cost carriers ($\bar{x}$ = 3.91) (Table 4.90).

Table 4.89 Analysis of Variance between Normally Used Transport and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.290	.919
2. Parking facilities	.823	.534
3. Seat assignment	1.749	.123
4. Stairway / lifts / escalators	.426	.831
5. Information desk / counters	1.465	.201
6. Flight information screen	1.934	.088
7. Broadcasting / announcement	.427	.830
8. Information signs	.804	.547
9. Airport staff	.930	.461
10. Security screening	1.100	.360
11. Check-in counters	.442	.819
12. Baggage check-in	.444	.818
13. Retail shops	.510	.769
14. Restaurant / eating facilities	.192	.966
15. Departure hall	1.915	.091
16. Aerobridges / connecting gate	.239	.945
17. Passenger steps / airfield buses	1.634	.151
18. Arrival hall	.861	.507
19. Baggage claiming system	1.017	.408
20. Baggage belts (arrival)	1.410	.220
21. Baggage drop service	2.941	.013*
22. Baggage carts / trolley	1.570	.168
23. Tour / hotel services *(Significant differences between groups were not found)*	3.580	.004*
24. Car rental facilities / taxi *(Significant differences between groups were not found)*	3.154	.009*
25. Safety measures	.442	.819
26. Security staff	.998	.419
27. Health services	.727	.604
28. Washrooms / toilets	1.534	.179
29. Prayer room	1.799	.115
30. Banks / exchange services	1.459	.204
31. Post office *(Significant differences between groups were not found)*	3.658	.003*
32. Public telephone	1.678	.141
33. Wi-Fi / internet services	1.143	.337
Total Efficiency	**1.402**	**.226**

Note: ANOVA test at 0.05 significant level

Table 4.90 Multiple Comparison between Transportation Types on Efficiency Scores

Attributes		Transportation					
21. Baggage drop service	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 Train	4.00	-	-	-	-	-	-
2 Rental car	5.67	-	-	-	-	(1.758)*	-
3 Public bus	4.36	-	-	-	-	-	-
4 Full-service carrier	4.17	-	-	-	-	-	-
5 Low-cost carrier	3.91	-	-	-	-	-	-
6 Private car	4.02	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.6.2 Accompanying groups

As mentioned earlier, accompanying group comprised of the title who accompanied the traveler, the number of persons who accompanied and how the travel arrangement was made. The differences between these variables were assessed.

1) Accompanying people

According to the ANOVA analysis, the accompanying person does not impact the total efficiency of operational attributes. The multiple comparisons between the accompanying groups show the 'accompanies' influenced accessibility, parking facilities, baggage check-in, baggage belts, prayer room and the internet services (Table 4.91).

The between groups variance in accessibility was caused by respondents who travelled alone ($\bar{x}$ = 4.30) and those with spouses ($\bar{x}$ = 4.78). Travellers travelling alone were concerned about the parking facilities with the low efficiency rating ($\bar{x}$ = 3.77) over the family group ($\bar{x}$ = 4.37). Sole traveller also rated lower efficiency ($\bar{x}$ = 4.28) than travellers with spouses ($\bar{x}$ = 4.70), or friends ($\bar{x}$ = 4.57) (Table 4.92).

Table 4.91 Analysis of Variance between Accompanying People and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	5.212	.002*
2. Parking facilities	3.184	.024*
3. Seat assignment	1.956	.120
4. Stairway / lifts / escalators	.174	.914
5. Information desk / counters	.614	.606
6. Flight information screen	1.007	.389
7. Broadcasting / announcement	1.486	.218
8. Information signs	.342	.795
9. Airport staff	.652	.582
10. Security screening	.578	.630
11. Check-in counters	2.212	.086
12. Baggage check-in	4.775	.003*
13. Retail shops	.378	.769
14. Restaurant / eating facilities	1.034	.378
15. Departure hall	1.349	.258
16. Aerobridges / connecting gate	.455	.714
17. Passenger steps / airfield buses	1.724	.162
18. Arrival hall	.735	.532
19. Baggage claiming system	1.719	.162
20. Baggage belts (arrival) *(Significant differences between groups were not found)*	2.838	.038*
21. Baggage drop service	1.844	.139
22. Baggage carts / trolley	.612	.608
23. Tour / hotel services	.498	.684
24. Car rental facilities / taxi	2.622	.051
25. Safety measures	1.020	.383
26. Security staff	.810	.489
27. Health services	.569	.636
28. Washrooms / toilets	.335	.800
29. Prayer room	4.433	.005*
30. Banks / exchange services	.605	.612
31. Post office	1.469	.224
32. Public telephone	1.560	.200
33. Wi-Fi / internet services	3.135	.025*
Total Efficiency	**.524**	**.666**

Note: ANOVA test at 0.05 significant level

Table 4.92 Multiple Comparison between Accompanying Groups on Efficiency Scores

Attributes		Accompanies			
1. Accessibility	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.30	-	-	-	-
2 Spouse	4.78	(.488)*	-	(.523)*	-
3 Friends / Colleagues	4.26	-	-	-	-
4 Family	4.54	-	-	-	-
2. Parking facilities	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	3.77	-	-	-	(.598)*
2 Spouse	3.96	-	-	-	-
3 Friends / Colleagues	3.88	-	-	-	-
4 Family	4.37	-	-	-	-
12. Baggage check-in	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.28	-	(.426)*	(.291)*	-
2 Spouse	4.70	-	-	-	-
3 Friends / Colleagues	4.57	-	-	-	-
4 Family	4.60	-	-	-	-
29. Prayer room	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	4.29	-	-	-	-
2 Spouse	3.42	(.864)*	-	-	(.777)*
3 Friends / Colleagues	4.03	-	-	-	-
4 Family	4.20	-	-	-	-
33. Wi-Fi / internet services	$\bar{x}$	**1**	**2**	**3**	**4**
1 Alone	2.59	-	-	-	-
2 Spouse	2.03	-	-	-	(.735)*
3 Friends / Colleagues	2.51	-	-	-	-
4 Family	2.76	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

2) Number of accompanying people

The number of persons accompanying respondents ranged from none to more than six persons. An analysis of variance was conducted between the accompanying persons and airport attributes. The number of accompanying groups did not have significant results on the total efficiency (F = .244, P = .961). However, two individual attributes: baggage check-in and Wi-Fi services show some significant differences (Table 4.93).

Table 4.93 Analysis of Variance between Number of Accompanying People and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	2.118	.050
2. Parking facilities	.964	.449
3. Seat assignment	1.813	.095
4. Stairway / lifts / escalators	.704	.647
5. Information desk / counters	.606	.725
6. Flight information screen	1.191	.310
7. Broadcasting / announcement	1.041	.398
8. Information signs	.908	.489
9. Airport staff	1.826	.093
10. Security screening	.991	.431
11. Check-in counters	.494	.813
12. Baggage check-in	2.521	.021*
13. Retail shops	.684	.662
14. Restaurant / eating facilities	1.070	.380
15. Departure hall	.244	.962
16. Aerobridges / connecting gate	.423	.863
17. Passenger steps / airfield buses	1.090	.368
18. Arrival hall	.718	.635
19. Baggage claiming system	.529	.787
20. Baggage belts (arrival)	.861	.524
21. Baggage drop service	1.017	.414
22. Baggage carts / trolley	.979	.439
23. Tour / hotel services	.659	.683
24. Car rental facilities / taxi	1.686	.124
25. Safety measures	1.774	.103
26. Security staff	.812	.561
27. Health services	.150	.989
28. Washrooms / toilets	.591	.738
29. Prayer room	1.352	.236
30. Banks / exchange services	.102	.996
31. Post office	.811	.562
32. Public telephone	.625	.710
33. Wi-Fi / internet services *(Significant differences between groups were not found)*	2.231	.039*
Total Efficiency	**.244**	**.961**

Note: ANOVA test at 0.05 significant level

The multiple comparisons between importance scores on these two attributes were analyzed. There were no significant differences between groups found on Wi-Fi services whereas respondents with 2 persons ($\bar{x}$ = 4.61) rated efficiency levels higher than those who travel alone ($\bar{x}$ = 4.28) on baggage check-in (Table 4.94).

Table 4.94 Multiple Comparison between Number of Accompanying People on Efficiency Scores

Attributes		Number of Accompanying People						
12. Baggage check-in	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1 1 Person	4.28	-	(331)*	-	-	-	-	-
2 2 Persons	4.61	-	-	-	-	-	-	-
3 3 Persons	4.70	-	-	-	-	-	-	-
4 4 Persons	4.65	-	-	-	-	-	-	-
5 5 Persons	4.31	-	-	-	-	-	-	-
6 6 Persons	4.57	-	-	-	-	-	-	-
7 More than 6 persons	4.65	-	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Travel arrangements

Travel arrangements by respondent did not have significant influence on the average score of the efficiency of the operational attributes of Thailand airports. According to ANOVA (F= 0.5), travel arrangement impacted only the scores of aerobridges. That is, respondents who use travel agents ($\bar{x}$ = 3.88, rated efficiency levels of aerobridges lower than ones who had their own arrangement ($\bar{x}$ = 4.27). Travel arrangement did not influence any other attributes in all the 33 attributes assessed (Table 4.95).

4.3.6.3 Experience of air transport

1) Reasons of choosing LCC

An analysis of variance between the reasons for choosing LCC and efficiency levels on airport attributes indicated that there was no significant difference among the various reasons and total efficiency of airport attributes (F = 1.588, P = .153). However, between group difference was observed between the reasons and parking facilities (F = 2.418, P =.027), aerobridges (F = 2.847, P = .010), and Wi-Fi services (F = 2.139, P = .048). However, significant differences between groups of reasons were not found in multiple comparisons on those three attributes: parking facilities, aerobridges, and Wi-Fi services (Table 4.96).

Table 4.95 Travel Arrangement Comparison on Efficiency Levels of Operational Attributes

Attributes	Package		Own arrangement		t	df	P-value
	$\bar{x}$	SD	$\bar{x}$	SD			
1. Accessibility	4.50	.780	4.40	1.051	.454	421	.650
2. Parking facilities	4.07	1.072	3.91	1.195	.499	343	.618
3. Seat assignment	4.54	.977	4.16	1.002	1.813	421	.071
4. Stairway / lifts / escalators	4.52	.790	4.18	.991	1.600	400	.110
5. Information desk	4.26	1.046	4.06	1.032	.848	368	.397
6. Flight information screen	4.50	.834	4.23	1.012	1.266	421	.206
7. Broadcasting	4.42	.654	4.26	1.002	.777	421	.438
8. Information signs	4.42	.717	4.30	.982	.569	421	.570
9. Airport staff	4.46	1.021	4.33	1.013	.587	421	.558
10. Security screening	4.71	1.122	4.44	1.066	1.178	421	.240
11. Check-in counters	4.38	.924	4.57	.971	-.977	421	.329
12. Baggage check-in	4.29	.751	4.50	.932	-1.093	421	.275
13. Retail shops	3.85	1.040	3.74	1.045	.439	394	.661
14. Restaurant / eating facilities	3.58	1.216	3.69	1.076	-.444	387	.658
15. Departure hall	4.08	.974	4.12	.950	-.172	421	.863
16. Aerobridges	3.88	.992	4.27	.885	-2.085	421	.038*
17. Passenger steps / buses	4.13	1.025	3.91	1.023	.823	322	.411
18. Arrival hall	4.04	.955	4.18	.916	-.693	421	.488
19. Baggage claiming system	4.17	.816	4.27	.893	-.570	421	.569
20. Baggage belts (arrival)	4.13	.992	4.21	.920	-.453	421	.651
21. Baggage drop service	4.38	.885	4.07	.996	1.193	294	.234
22. Baggage carts / trolley	4.54	.833	4.46	.924	.398	420	.691
23. Tour / hotel services	3.80	1.612	4.03	.978	-.535	4.557	.601
24. Car rental facilities / taxi	3.14	1.834	4.12	1.024	-1.978	3.415	.069
25. Safety measures	4.46	1.250	4.43	1.029	.136	421	.892
26. Security staff	4.13	1.035	4.37	1.014	-1.153	421	.250
27. Health services	4.50	.798	4.16	1.160	1.012	252	.313
28. Washrooms / toilets	4.50	1.351	4.28	1.064	.953	421	.341
29. Prayer room	4.63	.518	4.05	1.111	1.446	210	.150
30. Banks / exchange services	4.35	1.057	4.16	1.025	.741	303	.459
31. Post office	4.45	.820	4.00	1.053	1.423	238	.156
32. Public telephone	4.36	1.120	4.04	1.095	.970	259	.333
33. Wi-Fi / internet services	2.46	1.744	2.49	1.528	-.102	421	.919
Average Scores	**4.6407**	**.68867**	**4.1988**	**.66389**	**1.726**	**187**	**.086**

Note: t-test at 0.05 statistical significant level

Table 4.96 Analysis of Variance between Reasons of Choosing LCC and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.364	.228
2. Parking facilities *(Significant differences between groups were not found)*	2.418	.027*
3. Seat assignment	.580	.746
4. Stairway / lifts / escalators	1.498	.177
5. Information desk / counters	1.596	.147
6. Flight information screen	1.104	.359
7. Broadcasting / announcement	1.439	.198
8. Information signs	.678	.667
9. Airport staff	1.350	.234
10. Security screening	1.170	.321
11. Check-in counters	.965	.449
12. Baggage check-in	.797	.573
13. Retail shops	1.119	.350
14. Restaurant / eating facilities	1.197	.307
15. Departure hall	1.107	.357
16. Aerobridges / connecting gate *(Significant differences between groups were not found)*	2.847	.010*
17. Passenger steps / airfield buses	1.224	.293
18. Arrival hall	1.552	.160
19. Baggage claiming system	2.068	.056
20. Baggage belts (arrival)	1.662	.129
21. Baggage drop service	2.128	.050
22. Baggage carts / trolley	1.021	.411
23. Tour / hotel services	1.489	.182
24. Car rental facilities / taxi	1.716	.117
25. Safety measures	1.302	.255
26. Security staff	.847	.534
27. Health services	1.204	.305
28. Washrooms / toilets	.710	.642
29. Prayer room	1.302	.258
30. Banks / exchange services	.723	.631
31. Post office	1.524	.171
32. Public telephone	.872	.516
33. Wi-Fi / internet services *(Significant differences between groups were not found)*	2.139	.048*
Total Efficiency	**1.588**	**.153**

Note: ANOVA test at 0.05 significant level

2) Most frequently used airlines

The other important travellers' experience examined was the most frequently used airlines. According to the analysis of variance (F= 0.05), there was no significant difference between the operation attributes and the total efficiency. However, the favored airlines relevant in efficiency of the baggage claiming system (F = 3.773, P = .005), parking facilities (F = 2.657, P = .033), seat arrangement (F = 4.623, P = .001) and Wi-Fi internet (F = 31.599, P = .000) (Table 4.97).

Table 4.97 Analysis of Variance between Most Frequently Used Airlines and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.579	.678
2. Parking facilities *(Significant differences between groups were not found)*	2.657	.033*
3. Seat assignment	4.623	.001*
4. Stairway / lifts / escalators	2.207	.068
5. Information desk / counters	.853	.492
6. Flight information screen	2.344	.054
7. Broadcasting / announcement	1.424	.225
8. Information signs	.748	.560
9. Airport staff	.763	.550
10. Security screening	.960	.429
11. Check-in counters	1.433	.222
12. Baggage check-in	1.326	.259
13. Retail shops	.607	.658
14. Restaurant / eating facilities	1.831	.122
15. Departure hall	.318	.866
16. Aerobridges / connecting gate	1.398	.234
17. Passenger steps / airfield buses	.521	.720
18. Arrival hall	.696	.595
19. Baggage claiming system	3.773	.005*
20. Baggage belts (arrival)	2.186	.070
21. Baggage drop service	2.321	.057
22. Baggage carts / trolley	1.137	.339
23. Tour / hotel services	1.891	.112
24. Car rental facilities / taxi	.560	.692
25. Safety measures	1.621	.168
26. Security staff	.707	.588
27. Health services	.758	.553
28. Washrooms / toilets	.480	.750
29. Prayer room	1.368	.246
30. Banks / exchange services	.148	.964
31. Post office	1.950	.103
32. Public telephone	1.356	.250
33. Wi-Fi / internet services	31.599	.000*
Total Efficiency	**.188**	**.945**

Note: ANOVA test at 0.05 significant level

Multiple comparisons between groups of airlines used did not find significant differences on parking facilities. Passengers who mostly used Thai Airways International which is the national flag carrier rated higher efficiency on baggage claiming system over the passengers of Bangkok Airways and Orient Thai Airlines, significantly. Passengers who often fly with Thai AirAsia rated Wi-Fi

services at airport with the lower scores compared to passengers often fly with Nok Air ($\bar{x}$ AirAsia = 1.84, $\bar{x}$ Nok Air = 3.49) where Nok Wi-Fi was provided for the check-in passengers (Table 4.98).

Table 4.98 Multiple Comparison between Top Used Airlines on Efficiency Scores

Attributes		Airlines				
3. Seat assignment	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	4.21	-	-	-	-	-
2 Bangkok Airways	3.93	-	-	-	-	-
3 Nok Air	4.11	-	-	-	-	-
4 Orient Thai Airlines	2.83	(1.376)*	-	(1.276)*	-	(1.688)*
5 Thai Airways International	4.52	-	-	-	-	-
19. Baggage claiming system	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	4.28	-	-	-	-	-
2 Bangkok Airways	3.71	-	-	-	-	-
3 Nok Air	4.28	-	-	-	-	-
4 Orient Thai Airlines	3.33	-	-	-	-	-
5 Thai Airways International	4.48	-	(.764)*	-	(1.145)*	-
33. Wi-Fi / internet services	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**
1 Thai AirAsia	1.84	-	-	-	-	-
2 Bangkok Airways	2.29	-	-	-	-	-
3 Nok Air	3.49	(1.648)*	(1.203)*	-	-	-
4 Orient Thai Airlines	2.33	-	-	-	-	-
5 Thai Airways International	2.70	(855)*	(.793)*	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Experience of domestic LCC flight per year

ANOVA between experience of domestic LCC flights and efficiency levels on airport operational attributes indicated that there is no significant in the differences experiences on domestic LCC on the total efficiency The most significant variables that are impacted by the experience of LCC flights include Wi-Fi (F = 3.085, P = .010), baggage drop services (F = 2.491, P = .031), airport staff (F = 3.200, P = .008), escalators (F = 2.573, P = .026), seat assignment (F = 5.551, P = .000) and parking facilities (F = 4.043, P = .001) (Table 4.99).

Table 4.99 Analysis of Variance between Experience of Domestic LCC Flights and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.656	.657
2. Parking facilities	4.043	.001*
3. Seat assignment	5.551	.000*
4. Stairway / lifts / escalators *(Significant differences between groups were not found)*	2.573	.026*
5. Information desk / counters	2.034	.073
6. Flight information screen	1.400	.223
7. Broadcasting / announcement	1.060	.382
8. Information signs	1.869	.099
9. Airport staff *(Significant differences between groups were not found)*	3.200	.008*
10. Security screening	1.828	.106
11. Check-in counters	.961	.442
12. Baggage check-in	1.721	.128
13. Retail shops	.295	.915
14. Restaurant / eating facilities	.806	.546
15. Departure hall	.293	.917
16. Aerobridges / connecting gate	.470	.798
17. Passenger steps / airfield buses	.395	.852
18. Arrival hall	.361	.875
19. Baggage claiming system	1.898	.094
20. Baggage belts (arrival)	1.395	.225
21. Baggage drop service *(Significant differences between groups were not found)*	2.491	.031*
22. Baggage carts / trolley	.827	.531
23. Tour / hotel services	.385	.859
24. Car rental facilities / taxi	1.002	.417
25. Safety measures	.726	.605
26. Security staff	1.483	.194
27. Health services	.445	.816
28. Washrooms / toilets	1.945	.086
29. Prayer room	1.468	.202
30. Banks / exchange services	.406	.845
31. Post office	.844	.520
32. Public telephone	.582	.714
33. Wi-Fi / internet services *(Significant differences between groups were not found)*	3.085	.010*
Total Efficiency	**.262**	**.933**

Note: ANOVA test at 0.05 significant level

The multiple comparisons between domestic LCC experiences on efficiency score indicated that there were no significant differences found in multiple comparisons on these four attributes: stairways/lifts/escalators, airport staff, baggage drop service, and Wi-Fi services. Experiences of domestic LCC flight per year did affect to efficiency scores of parking facilities and seat assignments. Respondents who traveled with domestic LCC for more than 10 times a year tended to rate on efficiency with the lower scores over the respondents who had just 1-2 times per year (Table 4.100).

Table 4.100 Multiple Comparison between Domestic LCC Experiences on Efficiency Scores

Attributes		Domestic LCC Experiences					
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times/year	4.18	-	-	-	-	-	-
2 3-4 times/ year	4.09	-	-	-	-	-	-
3 5-6 times/year	3.80	-	-	-	-	-	-
4 7-8 times/year	4.06	-	-	-	-	-	-
5 9-10 times/year	3.67	-	-	-	-	-	-
6 More than 10 times/year	3.36	(.822)*	(.731)*	-	-	-	-
3. Seat assignment	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times/year	4.25	-	-	-	-	-	-
2 3-4 times/ year	4.43	-	-	-	-	(.593)*	-
3 5-6 times/year	4.16	-	-	-	-	-	-
4 7-8 times/year	4.13	-	-	-	-	-	-
5 9-10 times/year	3.83	-	-	-	-	-	-
6 More than 10 times/year	3.68	(.574)*	(.746)*	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.6.4 Experience of airports

1) Numbers of arrivals and departures at the airport

ANOVA between airport experiences on efficiency level and individuals attributes indicated significant difference in attributes such as the parking facilities (F = 6.218, P = .000), seat assignment (F = 5.788, P = .000), information signs (F = 3.401, P = .005), airport staff (F = 2.700, P = .020), baggage check-in (F = 2.776, P = .018), baggage claiming system (F = 4.697, P = .000), baggage belts (F = 2.933, P = .013), baggage drop services (F = 4.934, P = .000), safety measures (F = 2.958, P = .012), security staff (F = 2.949, P = .013), washrooms/toilets (F = 2.424, P = .035), and Wi-Fi services (F = 2.331, P = .042) (Table 4.101).

The multiple comparisons between groups indicated that three significant differences were not found among three attributes: baggage check-in system, safety measures, and washrooms/toilets. Respondents who had higher experiences on airports especially more than 10 times tended to rate on efficiency level with lower scores on baggage belts, baggage claiming system, or airport staff compared to those who had less experiences especially ones with 1-2 times (Table 4.102).

Table 4.101 Analysis of Variance between Airport Experiences and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.250	.285
2. Parking facilities	6.218	.000*
3. Seat assignment	5.788	.000*
4. Stairway / lifts / escalators	1.432	.212
5. Information desk / counters	1.610	.156
6. Flight information screen	.948	.449
7. Broadcasting / announcement	1.208	.305
8. Information signs	3.401	.005*
9. Airport staff	2.700	.020*
10. Security screening	2.183	.055
11. Check-in counters	1.471	.198
12. Baggage check-in *(Significant differences between groups were not found)*	2.776	.018*
13. Retail shops	.438	.822
14. Restaurant / eating facilities	.626	.680
15. Departure hall	.697	.626
16. Aerobridges / connecting gate	.273	.928
17. Passenger steps / airfield buses	.821	.535
18. Arrival hall	1.190	.313
19. Baggage claiming system	4.697	.000*
20. Baggage belts (arrival)	2.933	.013*
21. Baggage drop service	4.934	.000*
22. Baggage carts / trolley	1.392	.226
23. Tour / hotel services	.859	.509
24. Car rental facilities / taxi	.544	.743
25. Safety measures *(Significant differences between groups were not found)*	2.958	.012*
26. Security staff	2.949	.013*
27. Health services	1.533	.180
28. Washrooms / toilets *(Significant differences between groups were not found)*	2.424	.035*
29. Prayer room	.584	.713
30. Banks / exchange services	.989	.425
31. Post office	.506	.771
32. Public telephone	1.202	.309
33. Wi-Fi / internet services	2.331	.042*
Total Efficiency	**1.249**	**.288**

Note: ANOVA test at 0.05 significant level

Table 4.102 Multiple Comparison between Different Airport Experiences on Efficiency Scores

Attributes		Airport Experiences					
2. Parking facilities	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.19	-	-	-	(.872)*	-	(.959)*
2 3-4 times	3.92	-	-	-	-	-	-
3 5-6 times	3.60	-	-	-	-	-	-
4 7-8 times	3.32	-	-	-	-	-	-
5 9-10 times	3.67	-	-	-	-	-	-
6 More than 10 times	3.23	-	-	-	-	-	-
3. Seat assignment	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.31	-	-	-	-	-	-
2 3-4 times	4.26	-	-	-	-	-	-
3 5-6 times	4.26	-	-	-	-	-	-
4 7-8 times	3.50	(.812)*	(.765)*	-	-	-	-
5 9-10 times	3.74	-	-	-	-	-	-
6 More than 10 times	3.66	(.655)*	(.608)*	-	-	-	-
8. Information signs	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.40	-	-	-	-	-	-
2 3-4 times	4.32	-	-	-	-	-	-
3 5-6 times	4.42	-	-	-	-	-	-
4 7-8 times	3.70	(.700)*	-	-	-	-	-
5 9-10 times	4.21	-	-	-	-	-	-
6 More than 10 times	3.91	-	-	-	-	-	-
9. Airport staff	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.44	-	-	-	-	-	-
2 3-4 times	4.37	-	-	-	-	-	-
3 5-6 times	4.29	-	-	-	-	-	-
4 7-8 times	4.05	-	-	-	-	-	-
5 9-10 times	4.26	-	-	-	-	-	-
6 More than 10 times	3.83	(.611)*	-	-	-	-	-
19. Baggage claiming system	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.39	-	-	-	-	-	-
2 3-4 times	4.28	-	-	-	-	-	-
3 5-6 times	4.03	-	-	-	-	-	-
4 7-8 times	3.85	-	-	-	-	-	-
5 9-10 times	4.32	-	-	-	-	-	-
6 More than 10 times	3.77	(.621)*	-	-	-	-	-
20. Baggage belts	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.31	-	-	-	-	-	-
2 3-4 times	4.22	-	-	-	-	-	-
3 5-6 times	4.13	-	-	-	-	-	-
4 7-8 times	3.90	-	-	-	-	-	-
5 9-10 times	4.16	-	-	-	-	-	-
6 More than 10 times	3.74	(.565)*	-	-	-	-	-

Table 4.102 (Continued)

Attributes		Airport Experiences					
21. Baggage drop service	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.26	-	-	-	-	-	-
2 3-4 times	4.02	-	-	-	-	-	-
3 5-6 times	4.17	-	-	-	-	-	-
4 7-8 times	3.82	-	-	-	-	-	-
5 9-10 times	3.80	-	-	-	-	-	-
6 More than 10 times	3.32	(.943)*	(.700)*	(.854)*	-	-	-
26. Security staff	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.49	-	-	-	-	-	-
2 3-4 times	4.18	-	-	-	-	-	-
3 5-6 times	4.45	-	-	-	-	-	-
4 7-8 times	4.10	-	-	-	-	-	-
5 9-10 times	4.16	-	-	-	-	-	-
6 More than 10 times	3.94	(.545)*	-	-	-	-	-
33. Wi-Fi / internet services	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	2.36	-	-	-	-	-	
2 3-4 times	2.50	-	-	-	-	-	-
3 5-6 times	2.45	-	-	-	-	-	-
4 7-8 times	2.65	-	-	-	-	-	-
5 9-10 times	3.53	(1.162)*	-	-	-	-	-
6 More than 10 times	2.74	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

2) Numbers of times flying with LCC at the airport

An analysis of the number of times flying with LCC at the airport and the efficiency level of airport operational attributes suggest an overall negative relationship between the operation efficiency and the number of visits. ANOVA analysis of the various attributes show significant difference in attributes such as parking facilities (F = 4.526, P = .001), seat assignment (F = 4.424, P = .001), lifts/escalators (F = 4.174, P = .001), information desk (F = 2.585, P = .026), flight information (F = 3.277, P = .006), airport staff (F = 3.031, P = .011), check-in counters (F = 3.380, P = .005), baggage check-in (F = 4.269, P = .001), baggage claiming system (F = 3.611, P = .003), baggage belt (F = 2.753, P = .018), baggage drop service (F = 4.111, P =.001) and Wi-Fi (F = 2.979, P = .012) (Table 4.103).

Table 4.103 Analysis of Variance between Airport Experiences with LCC and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.026	.402
2. Parking facilities	4.526	.001*
3. Seat assignment	4.424	.001*
4. Stairway / lifts / escalators	4.174	.001*
5. Information desk / counters	2.585	.026*
6. Flight information screen	3.277	.006*
7. Broadcasting / announcement	1.693	.135
8. Information signs	2.919	.013*
9. Airport staff *(Significant differences between groups were not found)*	3.031	.011*
10. Security screening	1.863	.100
11. Check-in counters	3.380	.005*
12. Baggage check-in	4.269	.001*
13. Retail shops	.760	.579
14. Restaurant / eating facilities	1.160	.328
15. Departure hall	1.836	.105
16. Aerobridges / connecting gate	1.674	.140
17. Passenger steps / airfield buses	1.273	.275
18. Arrival hall	1.893	.094
19. Baggage claiming system	3.611	.003*
20. Baggage belts (arrival) *(Significant differences between groups were not found)*	2.753	.018*
21. Baggage drop service	4.111	.001*
22. Baggage carts / trolley	1.062	.381
23. Tour / hotel services	.475	.795
24. Car rental facilities / taxi	.556	.734
25. Safety measures	1.577	.165
26. Security staff	1.618	.154
27. Health services	1.260	.282
28. Washrooms / toilets	1.690	.136
29. Prayer room	1.238	.293
30. Banks / exchange services	.693	.629
31. Post office	2.067	.070
32. Public telephone	1.011	.412
33. Wi-Fi / internet services *(Significant differences between groups were not found)*	2.979	.012*
Total Efficiency	**.986**	**.428**

Note: ANOVA test at 0.05 significant level

In terms of efficiency scores, the multiple comparisons between times visiting the airports with LCC on efficiency scores analysis indicated that first-time visitors felt most attributes were efficient superior ones who had much experiences, significantly (Table 4.104).

Table 4.104 Multiple Comparison between Different Times Visiting the Airports with LCC on Efficiency Scores

Attributes		Times Visit the Airports with LCC					
2. Parking facilities	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.11	-	-	-	-	-	(.912)*
2 3-4 times	3.94	-	-	-	-	-	-
3 5-6 times	3.45	-	-	-	-	-	-
4 7-8 times	3.86	-	-	-	-	-	-
5 9-10 times	3.44	-	-	-	-	-	-
6 More than 10 times	3.20	-	-	-	-	-	-
3. Seat assignment	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.31	-	-	-	-	-	(.631)*
2 3-4 times	4.21	-	-	-	-	-	-
3 5-6 times	3.76	-	-	-	-	-	-
4 7-8 times	4.00	-	-	-	-	-	-
5 9-10 times	3.65	-	-	-	-	-	-
6 More than 10 times	3.68	-	-	-	-	-	-
4. Stairway / lifts / escalators	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.29	-	-	-	-	-	-
2 3-4 times	4.35	-	-	-	-	-	-
3 5-6 times	3.52	(.774)*	(.831)*	-	-	-	-
4 7-8 times	3.93	-	-	-	-	-	-
5 9-10 times	4.00	-	-	-	-	-	-
6 More than 10 times	4.04	-	-	-	-	-	-
5. Information desk	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.17	-	-	-	-	-	-
2 3-4 times	4.08	-	-	-	-	-	-
3 5-6 times	3.48	(.682)*	-	-	-	-	-
4 7-8 times	4.00	-	-	-	-	-	-
5 9-10 times	4.12	-	-	-	-	-	-
6 More than 10 times	3.83	-	-	-	-	-	-
6. Flight information screen	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.32	-	-	-	-	-	-
2 3-4 times	4.37	-	-	-	-	-	-
3 5-6 times	3.62	(.702)*	(.752)*	-	-	-	-
4 7-8 times	4.07	-	-	-	-	-	-
5 9-10 times	4.18	-	-	-	-	-	-
6 More than 10 times	4.00	-	-	-	-	-	-
8. Information signs	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.41	-	-	-	-	-	-
2 3-4 times	4.31	-	-	-	-	-	-
3 5-6 times	3.79	(.614)*	-	-	-	-	-
4 7-8 times	4.07	-	-	-	-	-	-
5 9-10 times	4.00	-	-	-	-	-	-
6 More than 10 times	4.16	-	-	-	-	-	-

Table 4.104 (Continued)

Attributes		Times Visit the Airports with LCC					
11. Check-in counters	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.67	-	-	-	-	-	-
2 3-4 times	4.49	-	-	-	-	-	-
3 5-6 times	3.97	(701)*	-	-	-	-	-
4 7-8 times	4.53	-	-	-	-	-	-
5 9-10 times	4.24	-	-	-	-	-	-
6 More than 10 times	4.56	-	-	-	-	-	-
12. Baggage check-in	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.61	-	-	-	-	-	-
2 3-4 times	4.45	-	-	-	-	-	-
3 5-6 times	3.86	(.745)*	-	-	-	-	-
4 7-8 times	4.33	-	-	-	-	-	-
5 9-10 times	4.18	-	-	-	-	-	-
6 More than 10 times	4.40	-	-	-	-	-	-
19. Baggage claiming system	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.37	-	-	-	-	-	-
2 3-4 times	4.24	-	-	-	-	-	-
3 5-6 times	3.79	(.574)*	-	-	-	-	-
4 7-8 times	4.40	-	-	-	-	-	-
5 9-10 times	3.88	-	-	-	-	-	-
6 More than 10 times	4.00	-	-	-	-	-	-
21. Baggage drop service	**x̄**	**1**	**2**	**3**	**4**	**5**	**6**
1 1-2 times	4.22	-	-	-	-	(.886)*	(.720)*
2 3-4 times	4.04	-	-	-	-	-	-
3 5-6 times	3.83	-	-	-	-	-	-
4 7-8 times	4.42	-	-	-	-	-	-
5 9-10 times	3.33	-	-	-	-	-	-
6 More than 10 times	3.50	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

3) Average time used on departure

ANOVA between times spent on departure and efficiency levels on airport operational attributes does not indicate a significant difference between the total efficiency of airport attributes. The analysis of various attributes indicated that the time spent on the departure influence respondents rating of the seat assignment (F = 4.174, P = .001), information desk (F = 3.072, P = .010), information screen (F = 3.571, P = .004), information sign (F = 3.021, P = .011), retail shops (F = 2.272, P = .047), exchange services (F = 2.808, P = .017) and Wi-Fi (F = 2.707, P = .020) (Table 4.105).

Table 4.105 Analysis of Variance between Time Spent on Departure and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	.880	.494
2. Parking facilities	1.820	.108
3. Seat assignment	4.174	.001*
4. Stairway / lifts / escalators	1.212	.303
5. Information desk / counters	3.072	.010*
6. Flight information screen	3.571	.004*
7. Broadcasting / announcement	.960	.442
8. Information signs	3.021	.011*
9. Airport staff	1.797	.112
10. Security screening	1.323	.253
11. Check-in counters	1.978	.081
12. Baggage check-in	1.993	.079
13. Retail shops *(Significant differences between groups were not found)*	2.272	.047*
14. Restaurant / eating facilities	1.241	.289
15. Departure hall	.640	.669
16. Aerobridges / connecting gate	.943	.453
17. Passenger steps / airfield buses	.379	.863
18. Arrival hall	.716	.612
19. Baggage claiming system	1.487	.193
20. Baggage belts (arrival)	1.108	.355
21. Baggage drop service	.526	.756
22. Baggage carts / trolley	.866	.504
23. Tour / hotel services	1.469	.200
24. Car rental facilities / taxi	.346	.885
25. Safety measures	.864	.505
26. Security staff	1.110	.355
27. Health services	.808	.545
28. Washrooms / toilets	.806	.546
29. Prayer room	.994	.422
30. Banks / exchange services	2.808	.017*
31. Post office	1.670	.143
32. Public telephone	.966	.439
33. Wi-Fi / internet services	2.707	.020*
Total Efficiency	**.833**	**.528**

Note: ANOVA test at 0.05 significant level

The post hoc analysis indicates significant difference between visitors who spent less and much time at airports. Departure passengers who spent lesser time tended to rate lower efficiency scores on seat assignment, information desk, flight information screen, and information sigs. In similar on Wi-Fi services,

passengers who spent more time tended to be unsatisfied with the lower efficiency scores (Table 4.106).

Table 4.106 Multiple Comparison between Different Time Spent on Departure on Efficiency Scores

Attributes		**Time Spent on Departure**					
3. Seat assignment	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	4.39	-	-	-	-	-	-
2 61-90 minutes	3.90	(.495)*	-	-	(.702)*	-	-
3 91-120 minutes	4.16	-	-	-	-	-	-
4 121-150 minutes	4.60	-	-	-	-	-	-
5 151-180 minutes	4.32	-	-	-	-	-	-
6 More than 180 minutes	3.80	-	-	-	-	-	-
5. Information desk	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	4.13	-	-	-	-	-	-
2 61-90 minutes	3.86	-	-	-	-	-	-
3 91-120 minutes	4.06	-	-	-	-	-	-
4 121-150 minutes	4.80	-	(.941)*	(.739)*	-	-	-
5 151-180 minutes	4.13	-	-	-	-	-	-
6 More than 180 minutes	3.80	-	-	-	-	-	-
6. Flight information screen	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	4.26	-	-	-	-	-	-
2 61-90 minutes	4.03	-	-	(.414)*	-	-	-
3 91-120 minutes	4.44	-	-	-	-	-	-
4 121-150 minutes	4.64	-	-	-	-	-	-
5 151-180 minutes	4.00	-	-	-	-	-	-
6 More than 180 minutes	3.80	-	-	-	-	-	-
8. Information signs	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	4.36	-	-	-	-	-	-
2 61-90 minutes	4.05	-	-	-	-	-	-
3 91-120 minutes	4.37	-	-	-	-	-	-
4 121-150 minutes	4.72	-	(.669)*	-	-	-	-
5 151-180 minutes	4.48	-	-	-	-	-	-
6 More than 180 minutes	4.40	-	-	-	-	-	-
33. Wi-Fi / internet services	$\bar{x}$	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	2.85	-	-	-	-	-	-
2 61-90 minutes	2.40	-	-	-	-	-	-
3 91-120 minutes	2.45	-	-	-	-	-	-
4 121-150 minutes	2.16	-	-	-	-	-	-
5 151-180 minutes	1.87	(.977)*	-	-	-	-	-
6 More than 180 minutes	3.00	-	-	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4) Average time used on arrival

In addition to the departure time, ANOVA analysis on the average time used on the arrival and efficiency levels on airport operational attributes was conducted. The analysis indicated that there is no significant difference between the overall efficiency rating and the time spend on arrival. However, a significant difference was observed in the efficiency of washrooms, check-in counters, security screening, information sign, retail shops and parking facilities (Table 4.107).

Table 4.107 Analysis of Variance between Time Spent on Arrival and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	1.040	.394
2. Parking facilities *(Significant differences between groups were not found)*	2.913	.014*
3. Seat assignment	1.436	.210
4. Stairway / lifts / escalators	.885	.491
5. Information desk / counters	.726	.605
6. Flight information screen	.876	.497
7. Broadcasting / announcement	1.133	.342
8. Information signs *(Significant differences between groups were not found)*	2.712	.020*
9. Airport staff	1.151	.333
10. Security screening	2.578	.026*
11. Check-in counters	2.815	.016*
12. Baggage check-in	2.140	.060
13. Retail shops	4.360	.001*
14. Restaurant / eating facilities	1.654	.145
15. Departure hall	.772	.570
16. Aerobridges / connecting gate	.772	.570
17. Passenger steps / airfield buses	.490	.783
18. Arrival hall	1.646	.147
19. Baggage claiming system	1.639	.148
20. Baggage belts (arrival)	.671	.646
21. Baggage drop service	.355	.879
22. Baggage carts / trolley	1.589	.162
23. Tour / hotel services	.611	.691
24. Car rental facilities / taxi	.745	.590
25. Safety measures	1.386	.228
26. Security staff	1.482	.195
27. Health services	1.174	.322
28. Washrooms / toilets *(Significant differences between groups were not found)*	2.283	.046*
29. Prayer room	1.392	.229
30. Banks / exchange services	1.060	.383
31. Post office	1.831	.108
32. Public telephone	1.658	.145
33. Wi-Fi / internet services	1.636	.149
Total Efficiency	**.782**	**.564**

Note: ANOVA test at 0.05 significant level

Post hoc test found no significant differences between groups and parking facilities and information sign (Table 4.108). Significant difference was observed in security screening, check-in counters, and retail shops. Passengers who spend much time on arrival showed high efficiency scores on retail shops over those who spend lesser time.

Table 4.108 Multiple Comparison between Different Time Spent on Arrival on Efficiency Scores

Attributes		Time Spent on Arrival					
10. Security screening	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	4.52	-	-	-	-	-	-
2 61-90 minutes	4.38	-	-	-	-	-	-
3 91-120 minutes	4.18	-	-	-	-	-	-
4 121-150 minutes	4.54	-	-	-	-	-	-
5 151-180 minutes	4.00	-	-	-	-	-	-
6 More than 180 minutes	5.80	-	-	(1.616)*	-	-	-
11. Check-in counters	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	4.59	-	-	-	-	-	-
2 61-90 minutes	4.50	-	-	-	-	-	-
3 91-120 minutes	4.39	-	-	-	-	-	-
4 121-150 minutes	4.50	-	-	-	-	-	-
5 151-180 minutes	5.50	-	-	-	-	-	-
6 More than 180 minutes	5.80	-	(1.296)*	(1.405)*	-	-	-
13. Retail shops	**$\bar{x}$**	**1**	**2**	**3**	**4**	**5**	**6**
1 30-60 minutes	3.68	-	-	-	-	-	-
2 61-90 minutes	3.66	-	-	-	-	-	-
3 91-120 minutes	3.83	-	-	-	-	-	-
4 121-150 minutes	4.29	-	-	-	-	-	-
5 151-180 minutes	4.75	-	-	-	-	-	-
6 More than 180 minutes	5.20	(1.522)*	(1.536)*	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.3.6.5 Airports of the study

In order to assess variation in the efficiency levels and operational attributes of the airports, ANOVA was conducted on the 33 operational attributes. According to the analysis, there is a significant difference between the airports on the rating of the total efficiency of the various attributes (F = 7.134, P = .000). The

variation was significant in almost all attributes apart from baggage check-in, baggage carts and car rental facilities (Table 4.109).

Table 4.109 Analysis of Variance between Studied Airports and Efficiency Levels on Airport Operational Attributes

Attributes	F	P-value
1. Accessibility to the airport	18.089	.000*
2. Parking facilities	25.997	.000*
3. Seat assignment	9.392	.000*
4. Stairway / lifts / escalators	7.947	.000*
5. Information desk / counters	4.975	.002*
6. Flight information screen	6.288	.000*
7. Broadcasting / announcement	4.574	.004*
8. Information signs	3.798	.010*
9. Airport staff	8.695	.000*
10. Security screening	6.680	.000*
11. Check-in counters	4.391	.005*
12. Baggage check-in	2.035	.108
13. Retail shops	5.274	.001*
14. Restaurant / eating facilities	8.084	.000*
15. Departure hall	14.661	.000*
16. Aerobridges / connecting gate	5.807	.001*
17. Passenger steps / airfield buses	5.995	.001*
18. Arrival hall	10.217	.000*
19. Baggage claiming system	4.845	.003*
20. Baggage belts (arrival)	5.352	.001*
21. Baggage drop service	3.706	.012*
22. Baggage carts / trolley	1.939	.123
23. Tour / hotel services	5.086	.002*
24. Car rental facilities / taxi	1.927	.125
25. Safety measures	14.791	.000*
26. Security staff	15.683	.000*
27. Health services	3.352	.020*
28. Washrooms / toilets	8.207	.000*
29. Prayer room	.732	.534
30. Banks / exchange services	4.277	.006*
31. Post office	6.321	.000*
32. Public telephone	2.371	.071
33. Wi-Fi / internet services	5.253	.001*
Total Efficiency	**7.134**	**.000***

Note: ANOVA test at 0.05 significant level

The multiple comparisons between different airports on efficiency score highlights how the various airports were rated in the attributes of interest. Its rating was significantly rated differently. According to the analysis, the accessibility, parking facilities, waiting areas, escalators, information desk, flight information desk and screen, broadcasting, airport staff, security screening and all other operational

attributes were different between airports. Respondents of Phuket International Airport mostly rated all significant attributes with lower efficiency scores compared to those of the other airports (Table 4.110).

Table 4.110 Multiple Comparison between Different Airports on Efficiency Scores

Attributes		**Airports**			
1. Accessibility	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.90	-	(.654)*	(.915)*	(.622)*
2 Hat Yai (Had Yai)	4.55	-	-	-	-
3 CNX (Chiang Mai)	4.81	-	-	-	-
4 CEI (Chiang Rai)	4.52	-	-	-	-
2. Parking facilities	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.19	-	-	-	-
2 Hat Yai (Had Yai)	3.93	(.737)*	-	-	-
3 CNX (Chiang Mai)	4.08	(.889)*	-	-	-
4 CEI (Chiang Rai)	4.57	(1.374)*	(.637)*	(.485)*	-
3. Seat assignment	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.83	-	-	(.634)*	(.531)*
2 Hat Yai (Had Yai)	4.16	-	-	-	-
3 CNX (Chiang Mai)	4.47	-	-	-	-
4 CEI (Chiang Rai)	4.37	-	-	-	-
4. Stairway / lifts / escalators	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.88	-	(.419)*	(.622)*	-
2 Hat Yai (Had Yai)	4.30	-	-	-	-
3 CNX (Chiang Mai)	4.51	-	-	-	-
4 CEI (Chiang Rai)	4.21	-	-	-	-
5. Information desk	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.77	-	-	(.520)*	(.438)*
2 Hat Yai (Had Yai)	4.09	-	-	-	-
3 CNX (Chiang Mai)	4.29	-	-	-	-
4 CEI (Chiang Rai)	4.21	-	-	-	-
6. Flight information screen	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.19	-	-	(.374)*	-
2 Hat Yai (Had Yai)	4.31	-	-	-	-
3 CNX (Chiang Mai)	4.56	-	-	-	(.591)*
4 CEI (Chiang Rai)	3.97	-	-	-	-
7. Broadcasting	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.12	-	-	-	-
2 Hat Yai (Had Yai)	4.34	-	-	-	-
3 CNX (Chiang Mai)	4.54	(.424)*	-	-	(.426)*
4 CEI (Chiang Rai)	4.12	-	-	-	-

Table 4.110 (Continued)

Attributes		Airports			
8. Information signs	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.07	-	-	(.377)*	(.343)*
2 Hat Yai (Had Yai)	4.36	-	-	-	-
3 CNX (Chiang Mai)	4.45	-	-	-	-
4 CEI (Chiang Rai)	4.41	-	-	-	-
9. Airport staff	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.01	-	-	(.544)*	(.588)*
2 Hat Yai (Had Yai)	4.29	-	-	-	-
3 CNX (Chiang Mai)	4.55	-	-	-	-
4 CEI (Chiang Rai)	4.60	-	-	-	-
10. Security screening	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.12	-	(.413)*	(.486)*	(.555)*
2 Hat Yai (Had Yai)	4.53	-	-	-	-
3 CNX (Chiang Mai)	4.60	-	-	-	-
4 CEI (Chiang Rai)	4.67	-	-	-	-
11. Check-in counters	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.31	-	(.320)*	(.435)*	(.310)*
2 Hat Yai (Had Yai)	4.64	-	-	-	-
3 CNX (Chiang Mai)	4.75	-	-	-	-
4 CEI (Chiang Rai)	4.63	-	-	-	-
13. Retail shops	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.46	-	(.471)*	(.493)*	-
2 Hat Yai (Had Yai)	3.93	-	-	-	-
3 CNX (Chiang Mai)	3.96	-	-	-	-
4 CEI (Chiang Rai)	3.74	-	-	-	-
14. Restaurant / eating facilities	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.35	-	(.639)*	(.559)*	-
2 Hat Yai (Had Yai)	3.99	-	-	-	-
3 CNX (Chiang Mai)	3.91	-	-	-	-
4 CEI (Chiang Rai)	3.59	-	-	-	-
15. Departure hall	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.67		(.643)*	(.622)*	(.648)*
2 Hat Yai (Had Yai)	4.31	-	-	-	-
3 CNX (Chiang Mai)	4.29	-	-	-	-
4 CEI (Chiang Rai)	4.32	-	-	-	-
16. Aerobridges	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.98	-	(.336)*	(.367)*	(.437)*
2 Hat Yai (Had Yai)	4.31	-	-	-	-
3 CNX (Chiang Mai)	4.34	-	-	-	-
4 CEI (Chiang Rai)	4.41	-	-	-	-

Table 4.110 (Continued)

Attributes		Airports			
17. Passenger steps / buses	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.58		(.538)*	(.506)*	(.445)*
2 Hat Yai (Had Yai)	4.12	-	-	-	-
3 CNX (Chiang Mai)	4.09	-	-	-	-
4 CEI (Chiang Rai)	4.03	-	-	-	-
18. Arrival hall	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.80	-	(.541)*	(.520)*	(.505)*
2 Hat Yai (Had Yai)	4.34	-	-	-	-
3 CNX (Chiang Mai)	4.32	-	-	-	-
4 CEI (Chiang Rai)	4.31	-	-	-	-
19. Baggage claiming system	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	4.05	-		(.411)*	(.337)
2 Hat Yai (Had Yai)	4.24	-	-	-	-
3 CNX (Chiang Mai)	4.46	-	-	-	-
4 CEI (Chiang Rai)	4.38	-	-	-	-
20. Baggage belts (arrival)	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.98	-	-	(.472)*	(.322)*
2 Hat Yai (Had Yai)	4.18	-	-	-	-
3 CNX (Chiang Mai)	4.45	-	-	-	-
4 CEI (Chiang Rai)	4.30	-	-	-	-
21. Baggage drop service	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.83	-	-	(.428)*	(.457)*
2 Hat Yai (Had Yai)	4.01	-	-	-	-
3 CNX (Chiang Mai)	4.25	-	-	-	-
4 CEI (Chiang Rai)	4.28	-	-	-	-
23. Tour / hotel services	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.74	-	-	(.599)*	-
2 Hat Yai (Had Yai)	3.96	-	-	-	-
3 CNX (Chiang Mai)	4.34	-	-	-	-
4 CEI (Chiang Rai)	4.13	-	-	-	-
25. Safety measures	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.94	-	(.743)*	(.728)*	(.607)*
2 Hat Yai (Had Yai)	4.55	-	-	-	-
3 CNX (Chiang Mai)	4.69	-	-	-	-
4 CEI (Chiang Rai)	4.67	-	-	-	-
26. Security staff	$\bar{x}$	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.87	-	(.584)*	(.741)*	(.741)*
2 Hat Yai (Had Yai)	4.46	-	-	-	-
3 CNX (Chiang Mai)	4.61	-	-	-	-
4 CEI (Chiang Rai)	4.62	-	-	-	-

Table 4.110 (Continued)

Attributes		Airports			
27. Health services	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.79	-	-	(.558)*	-
2 Hat Yai (Had Yai)	4.21	-	-	-	-
3 CNX (Chiang Mai)	4.35	-	-	-	-
4 CEI (Chiang Rai)	4.35	-	-	-	-
28. Washrooms / toilets	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.94	-	(.534)*	(.649)*	-
2 Hat Yai (Had Yai)	4.48	-	-	-	-
3 CNX (Chiang Mai)	4.59	-	-	-	-
4 CEI (Chiang Rai)	4.28	-	-	-	-
30. Banks / exchange services	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.96	-	(.437)*	-	-
2 Hat Yai (Had Yai)	4.39	-	-	-	-
3 CNX (Chiang Mai)	4.38	-	-	-	-
4 CEI (Chiang Rai)	4.00	-	-	-	-
31. Post office	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.59	-	(.721)*	(.604)*	-
2 Hat Yai (Had Yai)	4.31	-	-	-	-
3 CNX (Chiang Mai)	4.19	-	-	-	-
4 CEI (Chiang Rai)	3.86	-	-	-	-
33. Wi-Fi / internet services	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	2.09	-	(.635)*	(.728)*	-
2 Hat Yai (Had Yai)	2.73	-	-	-	-
3 CNX (Chiang Mai)	2.82	-	-	-	-
4 CEI (Chiang Rai)	2.44	-	-	-	-
Total Efficiency	**$\bar{x}$**	**1**	**2**	**3**	**4**
1 HKT (Phuket)	3.84	-	(.375)*	(.632)*	(.411)*
2 Hat Yai (Had Yai)	4.21	-	-	-	-
3 CNX (Chiang Mai)	4.47	-	-	-	-
4 CEI (Chiang Rai)	4.25	-	-	-	-

Note: F-test (mean differences) at 0.05 significant level

4.4 Low-Cost Carrier Passengers' Requirements toward Thailand Airports' Operations (Objective 3)

In this research objective, two research questions (10 and 11) were involved. In order to analyze low-cost carrier passengers' requirements toward Thailand airports' operations, Gap analysis was employed in this research. Also, the differences between efficiency levels and importance levels of both operational attributes and operational procedures were tested. Two research questions in this section revealed the results of requirements on both operational substances.

4.4.1 What Operational Attributes of Thailand Airports Show Significant Gaps between Efficiency Levels and Importance Levels? (RQ10)

All 33 operational attributes had negative mean Gap scores. That meant that the efficiency mean was lower than the importance mean score, which implied that existing Thailand airports' operation did not well perform compared to the importance levels rated by low-cost carrier passenger. All operational attributes should be realized to improve the efficiency levels. Of 33 operational attributes, there was only one attribute 'post office' that did not show significant differences between that mean scores even the efficiency mean score was lower than one of an importance (Gap = -.129, P = .065). Thus, there were 32 operational attributes (96.97%) showed significant Gap between importance mean score and efficiency mean scores.

If 33 attributes were divided into three groups, each group comprised of 11 attributes. The top 11 largest negative Gap scores with significant level were Wi-Fi/Internet services (Gap = -2.716, P = .000), washrooms/toilets (Gap = -1.123, P = .000), passenger steps/airfield buses (Gap = -1.000, P = .000), security staff (Gap = -.948, P = .000), security screening (Gap = -.920, P = .000), information signs (Gap = -.908, P = .000), flight information screen (Gap = -.901, P = .000), health services (Gap = -.870, P = .000), safety measures (Gap = -.863, P = .000), parking facilities (Gap = -.791, P = .000), and airport staff (Gap = -.791, P = .000). Most of previous mentioned attributes were associated to basic needs of human so-called passengers.

All three attributes about safety & security, a health related attribute, and a sanitary attribute (washrooms/toilets) were included as well. Also, airport staff whose task was to provide services was included in the large Gap group. Surprisingly, Wi-Fi services which was not a core services of airports came up with the lowest efficiency and the highest negative Gap score. The implication of this circumstance was that most of passengers nowadays had their own computer devices or communication devices such as smart phones. Thus, passengers needed wireless connection for their devices especially while waiting for their departure flights or waiting for their friends from the arrival.

The next nine ranked operational attributes (11 attributes) that showed significant Gap were about the operational attributes that mainly related to passenger processing even on the departure or on the arrival. Eleven operational attributes comprised of baggage claiming system (Gap = -.723, P = .000), information desk/counters (Gap = -.700, P = .000), baggage check-in (Gap = -.688, P = .000), baggage belts (Gap = -.688, P = .000), check-in counters (Gap = -.667, P = .000), departure hall (Gap = -.652, P = .000), banks/exchange services (Gap = -.639, P = .000), seat assignment & waiting area (Gap = -.586, P = .000), restaurant/eating facilities (Gap = -.586, P = .000), accessibility to the airport (Gap = -.567, P = .000), and aerobridges/connecting gate (Gap = -.537, P = .000).

The rest attributes with smaller Gaps were mostly related to ancillary services such as baggage drop services, stairways, car rent, public telephones, prayer room, tour services, baggage trolley, or retails shops which can make passengers more convenient while being at airports. Ancillary services can fulfill passengers' satisfaction along with airports' basic services.

In short, 32 operational attributes had significant negative Gaps between 'Efficiency' levels and 'Importance' levels. In this research, the requirements of low-cost carrier passengers mainly involved on attributes related to basic needs in everyone's lives. The following group referred to those operational attributes needed to make passengers' procedures successful. The last priority belonged to ancillary services which did not directly affect to the success of passengers' travels but can complete their trips (Table 4.111).

Table 4.111 Comparison between Importance and Efficiency of Airports' Operational Attributes among Low-Cost Carrier Passengers

Rank & Attributes	Importance (I)		Efficiency (E)		E-I Gap	t-value	df	P-value
	Mean	SD	Mean	SD				
1. **Wi-Fi / internet services**	**5.21**	**1.130**	**2.49**	**1.539**	**-2.716**	**-29.340**	**422**	**.000***
2. **Washrooms / toilets**	**5.42**	**.765**	**4.30**	**1.082**	**-1.123**	**-18.615**	**422**	**.000***
3. **Passenger steps / airfield buses**	**4.90**	**.930**	**3.92**	**1.023**	**-1.000**	**-15.748**	**323**	**.000***
4. **Security staff**	**5.30**	**.897**	**4.36**	**1.015**	**-.948**	**-16.912**	**422**	**.000***
5. **Security screening**	**5.38**	**.931**	**4.46**	**1.070**	**-.920**	**-14.952**	**422**	**.000***
6. **Information signs**	**5.22**	**.941**	**4.31**	**.969**	**-.908**	**-16.159**	**422**	**.000***
7. **Flight information screen**	**5.15**	**1.000**	**4.25**	**1.003**	**-.901**	**-15.261**	**422**	**.000***
8. **Health services**	**4.97**	**1.059**	**4.17**	**1.146**	**-.870**	**-11.018**	**253**	**.000***
9. **Safety measures**	**5.29**	**.946**	**4.43**	**1.041**	**-.863**	**-15.516**	**422**	**.000***
10. **Parking facilities**	**4.38**	**1.612**	**3.92**	**1.189**	**-.791**	**-8.299**	**344**	**.000***
11. **Airport staff**	**5.08**	**.918**	**4.34**	**1.013**	**-.740**	**-12.602**	**422**	**.000***
12. Baggage claiming system	4.99	.887	4.27	.888	-.723	-14.832	422	.000*
13. Information desk / counters	4.71	1.100	4.07	1.032	-.700	-10.373	369	.000*
14. Baggage check-in	5.18	.871	4.49	.923	-.688	-13.173	422	.000*
Baggage belts (arrival)	4.90	.923	4.21	.923	-.688	-13.339	422	.000*
15. Check-in counters	5.23	.880	4.56	.969	-.667	-13.048	422	.000*
16. Departure hall	4.77	.987	4.12	.951	-.652	-11.001	422	.000*
17. Banks / exchange services	4.59	1.222	4.17	1.026	-.639	-9.094	304	.000*
18. Seat assignment & waiting area	4.77	1.018	4.18	1.004	-.586	-9.358	422	.000*
Restaurant / eating facilities	4.22	1.102	3.69	1.081	-.586	-8.496	388	.000*
19. Accessibility to the airport	4.97	1.045	4.41	1.037	-.567	-8.789	422	.000*
20. Aerobridges / connecting gate	4.78	.969	4.24	.895	-.537	-10.401	422	.000*
21. Broadcasting / announcement	4.80	1.127	4.26	.986	-.534	-9.562	422	.000*
22. Arrival hall	4.68	.973	4.17	.917	-.513	-9.716	422	.000*
23. Baggage drop service	4.51	1.135	4.09	.991	-.490	-7.274	295	.000*
24. Stairway / lifts / escalators	4.56	1.148	4.20	.983	-.353	-5.323	401	.000*
25. Car rental facilities / taxi	4.13	1.227	4.07	1.092	-.332	-4.338	288	.000*
26. Public telephone	4.00	1.404	4.05	1.096	-.330	-4.771	260	.000*
27. Prayer room	3.85	1.607	4.08	1.099	-.316	-3.476	211	.001*
28. Tour / hotel services	4.07	1.224	4.01	1.017	-.292	-4.353	294	.000*
29. Baggage carts / trolley	4.74	1.006	4.47	.918	-.275	-4.668	421	.000*
30. Retail shops	3.95	1.156	3.75	1.044	-.245	-3.862	395	.000*
31. Post office	*3.80*	*1.370*	*4.02*	*1.047*	*-.129*	*-1.852*	*239*	*.065*
Grand Mean	**4.74**	**.637**	**4.21**	**.668**	**-.539**	**-17.587**	**422**	**.000***

Note: Paired-Sample t-test indicated the differences between Gap analyses at 0.05 significant level

In addition, paired samples correlation was used to test the relationship between importance and efficiency within each attributes. Total importance and all attributes excepted accessibility to the airport, parking facilities, and Wi-Fi/internet services showed that they were significantly correlated at the significance 0.05 in the positive direction (Table 4.112).That is, if importance level is high, the efficiency level is also high, or if the importance level is low, the efficiency shows a low level as well. These implied that Thailand airports performed their operational efficiency at the same level of importance in the eyes of low-cost carrier passengers. The operational attributes that most correlated compared to the others were post office (r = .539, P = .000), public telephone (r = .529, P = .000), prayer room (r = .459, P = .000), tour/hotel services (r = .436, P = .000), and broadcasting/announcement (r = .415, P = .000).

Table 4.112 Correlation Analysis between Importance and Efficiency of Operational Attributes

Operational Attributes	Correlation (r)	P-value
1. Accessibility to the airport	*.187*	*.000*
2. Parking facilities	.017	.747
3. Seat assignment & waiting area	.188	.000*
4. Stairway / lifts / escalators	.232	.000*
5. Information desk / counters	.258	.000*
6. Flight information screen	.265	.000*
7. Broadcasting / announcement	.415	.000*
8. Information signs	.268	.000*
9. Airport staff	.220	.000*
10. Security screening	.206	.000*
11. Check-in counters	.357	.000*
12. Baggage check-in	.285	.000*
13. Retail shops	.329	.000*
14. Restaurant / eating facilities	.220	.000*
15. Departure hall	.208	.000*
16. Aerobridges / connecting gate	.354	.000*
17. Passenger steps / airfield buses	.308	.000*
18. Arrival hall	.341	.000*
19. Baggage claiming system	.162	.001*
20. Baggage belts (arrival)	.340	.000*
21. Baggage drop service	.405	.000*
22. Baggage carts / trolley	.212	.000*
23. Tour / hotel services	.436	.000*
24. Car rental facilities / taxi	.290	.000*
25. Safety measures	.341	.000*

Table 4.112 (Continued)

Operational Attributes	Correlation (r)	P-value
26. Security staff	.278	.000*
27. Health services	.331	.000*
28. Washrooms / toilets	.131	.007*
29. Prayer room	.459	.000*
30. Banks / exchange services	*.323*	*.000**
31. Post office	.539	.000*
32. Public telephone	.529	.000*
33. Wi-Fi / internet services	*.006*	*.902*
Total	**.406**	**.000***

Note: Correlation indicated a significant relation at the 0.05 significant level

4.4.2 What Operational Procedures of Thailand Airports Show Significant Gaps between Efficiency Levels and Importance Levels? (RQ11)

In order to propose an operation model for Thailand airports, Gap analysis between efficiency and importance levels on airport operational procedures' were examined. All four arrival procedures and five departure procedures had significant negative Gap which meant all operational procedures had efficiency mean scores lower than those of importance scores (Table 4.113). However, the results were similar to Gap analysis results on operational attributes which most of attributes had negative differences.

Also, paired samples correlation was tested in 9 operational procedures. The results showed that seven from nine procedures and total procedures were significantly correlated at the 0.05 significant level (Table 4.114). Whenever the importance levels were high, the efficiency levels were also high, or when the importance levels were low, the efficiency levels were also low. The operational procedure that was most correlated was Check-in counters to security screening (r = .415, P = .000) which belonged to departure procedures.

Table 4.113 Comparison between Importance and Efficiency of Airports' Operational Procedures among Low-Cost Carrier Passengers

	Rank	Procedures	Importance (I)		Efficiency (E)		E-I Gap	t-value	df	P-value
			Mean	SD	Mean	SD				
Arrival	4	1. Airplane to arrival hall (Deplane)	4.79	1.023	4.18	.830	-.610	-11.587	422	.000*
	6	2. Arrival hall to baggage claim	4.89	.893	4.33	.790	-.558	-11.311	422	.000*
	9	3. Baggage claim to public/retails services	4.59	1.040	4.29	.799	-.300	-5.184	422	.000*
	1	4. Terminal gate to ground transport	4.86	.939	4.20	.920	-.664	-11.899	422	.000*
	2	5. Ground transport to terminal	4.89	.955	4.24	.923	-.645	-11.413	422	.000*
Departure	7	6. Terminal gate to check-in counters	4.94	.869	4.39	.877	-.556	-10.535	422	.000*
	5	7. Check-in counters to security screening	4.95	.908	4.38	.859	-.570	-11.612	422	.000*
	8	8. Security screening to departure hall	5.00	.894	4.47	.837	-.530	-10.698	422	.000*
	3	9. Departure hall to airplane (Enplane)	4.99	.853	4.39	.938	-.643	-7.866	153	.000*
		Grand Mean	**4.88**	**.777**	**4.26**	**.746**	**-.562**	**-13.648**	**422**	**.000***

Note: Paired-Sample t-test indicated the differences between Gap analyses at 0.05 significant level

Table 4.114 Correlation Analysis between Importance and Efficiency of Operational Procedures

	Operational Attibutes	Correlation (r)	P-value
Arrival	*1. Airplane to arrival hall (Deplane)*	*.187*	*.000*
	2. Arrival hall to baggage claim	*.017*	*.747*
	3. Baggage claim to public/retails services	.188	.000*
	4. Terminal gate to ground transport	.232	.000*
Departure	5. Ground transport to terminal	.258	.000*
	6. Terminal gate to check-in counters	.265	.000*
	7. Check-in counters to security screening	.415	.000*
	8. Security screening to departure hall	.268	.000*
	9. Departure hall to airplane (Enplane)	.220	.000*
	Total	**.206**	**.000***

Note: Correlation indicated a significant relation at the 0.05 significant level

4.4.3 Importance – Performance Analysis on Airport Operations

As statistical results shown in section 4.3.1 and 4.3.4 on importance and efficiency of Thailand airports, a researcher applied IPA as a tool analyzing the holistic view of importance levels and efficiency levels on airports' operational attributes. IPA can facilitate a researcher identifying proper areas for development. To propose operational schemes for Thailand airports, frequency & mean scores of importance & efficiency, Gap analysis, and the IPA results were integrated for ultimate outputs.

4.4.3.1 IPA results on operational attributes

In order to demonstrate the IPA results on importance & efficiency, all 33 airport operational attributes were summarized into four quadrants. That are, 1) 'Concentrate Here' (high importance & low efficiency), 2) 'Low Priority' (low importance & low efficiency), 3) 'Keep Up the Good Work' (high importance & high efficiency), and 4) 'Possible Overkill' (low importance & high efficiency. The mean scores of both importance ($\bar{x}$ = 4.74) and efficiency ($\bar{x}$ = 4.21) were calculated as criteria to define the proper quadrant of each attributes. Attributes which had importance mean scores equal or higher than grand mean or had efficiency mean scores higher the efficiency grand mean referred to the 'High' quadrants. If the importance mean scores were lower than the importance grand mean or the efficiency mean scores were equal or lower than the efficiency grand mean, they implied the 'Low' quadrants.

The mean scores of 33 operational attributes in a relation to importance and efficiency was presented in Table 4.115. There were 6 attributes captured in the 1st quadrant *Concentrate Here*, 14 attributes in the 2nd quadrant *Keep Up the Good Work*, and 13 attributes in *Low Priority* quadrant. Thus, in this research, there was none of them fell in the *Possible Overkill* quadrant. The data was then transferred to the IPA grid presentation. The X-axis represented the efficiency scores of operational attributes while the Y-axis represented their importance scores (Figure 4.4).

Table 4.115 Low & High Mean Results on Operational Attributes Employed into the IPA

Importance		Attributes	Efficiency		Quadrants *
Results	**Mean**		**Mean**	**Results**	
High Importance	4.97	1. Accessibility to the airport	4.41	High Efficiency	2
Low Importance	4.38	2. Parking facilities	3.92	Low Efficiency	3
High Importance	4.77	3. Seat assignment & waiting area	4.18	Low Efficiency	1
Low Importance	4.56	4. Stairway / lifts / escalators	4.2	Low Efficiency	3
Low Importance	4.71	5. Information desk / counters	4.07	Low Efficiency	3
High Importance	5.15	6. Flight information screen	4.25	High Efficiency	2
High Importance	4.80	7. Broadcasting / announcement	4.26	High Efficiency	2
High Importance	5.22	8. Information signs	4.31	High Efficiency	2
High Importance	5.08	9. Airport staff	4.34	High Efficiency	2
High Importance	5.38	10. Security screening	4.46	High Efficiency	2
High Importance	5.23	11. Check-in counters	4.56	High Efficiency	2
High Importance	5.18	12. Baggage check-in	4.49	High Efficiency	2
Low Importance	3.95	13. Retail shops	3.75	Low Efficiency	3
Low Importance	4.22	14. Restaurant / eating facilities	3.69	Low Efficiency	3
High Importance	4.77	15. Departure hall	4.12	Low Efficiency	1
High Importance	4.78	16. Aerobridges / connecting gate	4.24	High Efficiency	2
High Importance	4.90	17. Passenger steps / airfield buses	3.92	Low Efficiency	1
Low Importance	4.68	18. Arrival hall	4.17	Low Efficiency	3
High Importance	4.99	19. Baggage claiming system	4.27	High Efficiency	2
High Importance	4.90	20. Baggage belts (arrival)	4.21	Low Efficiency	1
Low Importance	4.51	21. Baggage drop service	4.09	Low Efficiency	3
High Importance	4.74	22. Baggage carts / trolley	4.47	High Efficiency	2
Low Importance	4.07	23. Tour / hotel services	4.01	Low Efficiency	3
Low Importance	4.13	24. Car rental facilities / taxi	4.07	Low Efficiency	3
High Importance	5.29	25. Safety measures	4.43	High Efficiency	2
High Importance	5.30	26. Security staff	4.36	High Efficiency	2
High Importance	4.97	27. Health services	4.17	Low Efficiency	1
High Importance	5.42	28. Washrooms / toilets	4.30	High Efficiency	2
Low Importance	3.85	29. Prayer room	4.08	Low Efficiency	3
Low Importance	4.59	30. Banks / exchange services	4.17	Low Efficiency	3
Low Importance	3.80	31. Post office	4.02	Low Efficiency	3
Low Importance	4.00	32. Public telephone	4.05	Low Efficiency	3
High Importance	5.21	33. Wi-Fi / internet services	2.49	Low Efficiency	1
	4.74	**Grand Mean Scores**	**4.21**		

Note: Quadrant 1 ‘Concentrate Here’ Quadrant 2 ‘Keep Up the Good Work’
Quadrant 3 ‘Low Priority Quadrant 4 ‘Possible Overkill’

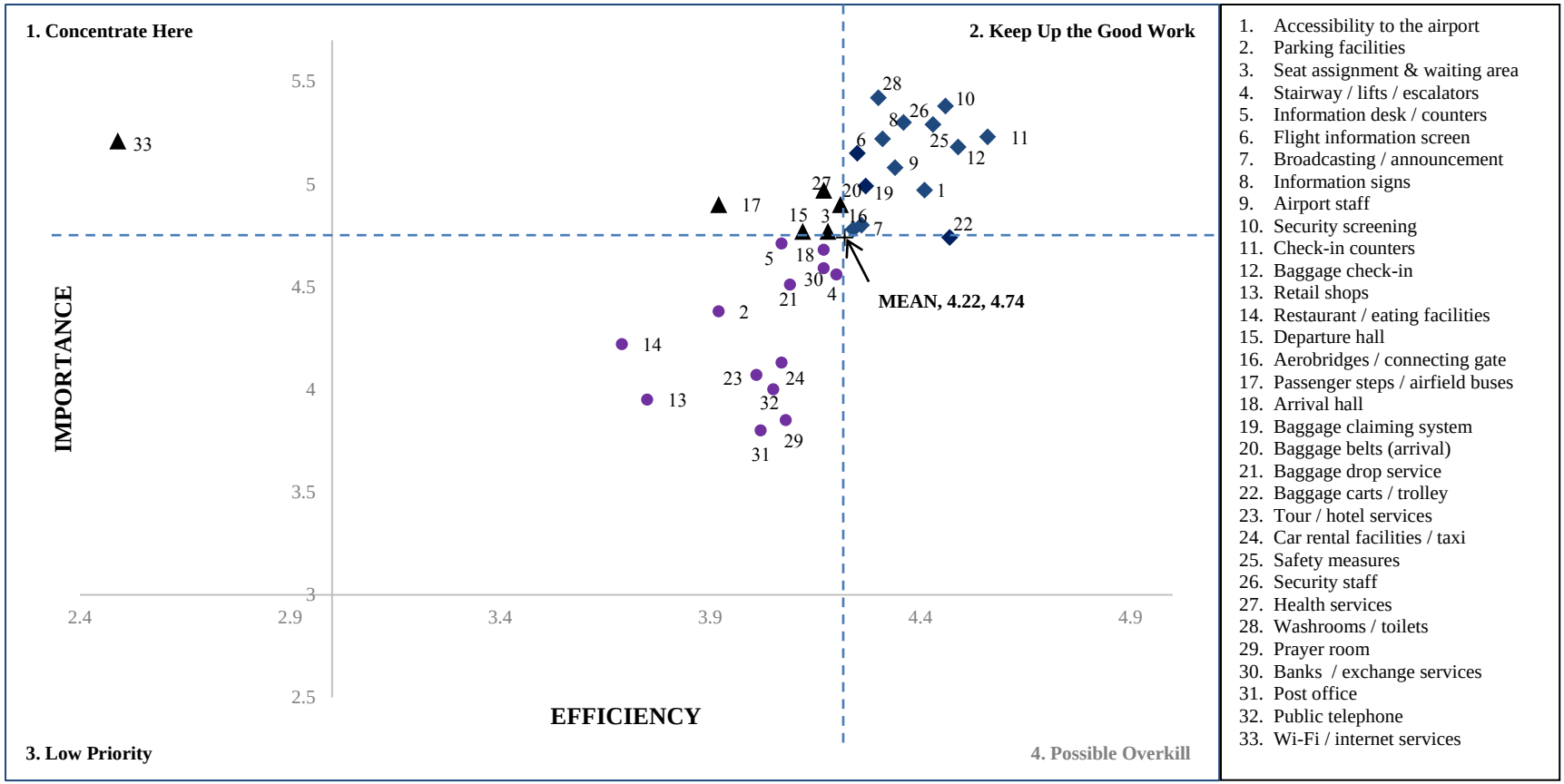


Figure 4.4 IPA Grid Illustrated Airport Operational Efficiency of Operational Attributes

1) Concentrate Here quadrant

The *Concentrate Here* quadrant identified 6 operational attributes of which their mean scores came up above the average for importance but below the efficiency average. Six attributes comprised of seat assignment & waiting area, departure hall, passenger steps/airfield buses, baggage belts (arrival), health services, and Wi-Fi/internet services. Also, ranks of importance on those attributes were rated higher than efficiency ranks. Fore examples, Wi-Fi/internet services came up with the 7^{th} importance and the 29^{th} efficiency whereas health services were at the 12^{th} importance with the 18^{th} efficiency.

2) Keep Up the Good Work quadrant

14 (42.42%) attributes were identified in the *Keep Up the Good Work* quadrant. These were accessibility to the airport, flight information screen, broadcasting/announcement, information signs, airport staff, security screening, check-in counters, baggage check-in, aerobridges/connecting gate, baggage claiming system, baggage carts/trolley, safety measures, security staff, and washrooms/toilets. These mentioned attributes were rated above importance and efficiency's grand mean scores. As resulted from only the IPA, it seemed all fourteen attributes were good enough to keep on. However from the Gap analysis, all of them significantly had efficiency mean scores lower than importance mean scores. Moreover, 6 of 14 attributes (i.e., washroom/toilets, security staff, security screening, information signs, flight information screen, and safety measures) were in the top ten attributes which had largest Gap. This might because the positive correlation between importance and efficiency within each attributes which made the efficiency results at the same direction with importance results as said.

3) Low Priority quadrant

The thirteen attributes allocated to the *Low Priority* quadrant were parking facilities, stairway/lifts/escalators, information desk/counters, retail shops, restaurants/eating facilities, arrival hall, baggage drop service, tour/hotel services, car rental facilities/taxi, prayer room, bank/exchange services, post office, and public telephone. Most of attributes dropped into this quadrant were ancillary services instead of airports' core services or passenger processes. Also, most of

attributes shown in the *Low Priority* quadrant had smaller negative Gap between efficiency and importance mean scores.

4.4.3.2 IPA results on operational procedures

Besides IPA on operational attributes, operational procedures results of Thailand airports were also analyzed in the IPA. Among 9 procedures, there were one procedure dropped into *'Concentrate Here'* quadrant, 5 procedures in *'Keep Up the Good Work'* quadrant, 2 procedures in *'Low Priority'* quadrant, and 1 procedure in *'Possible Overkill'* quadrant (Table 4.116). On IPA grid, X-axis showed the importance mean scores whereas the Y-axis showed the efficiency mean scores of each operational procedure (Figure 4.5).

Table 4.116 Low & High Mean Results on Operational Procedures Employed into the IPA

Importance		**Procedures**	**Efficiency**		**Quadrants ***
Results	**Mean**		**Mean**	**Results**	
Low Importance	4.79	1. Airplane to arrival hall (Deplane)	4.18	Low Efficiency	3
High Importance	4.89	2. Arrival hall to baggage claim	4.33	High Efficiency	2
Low Importance	4.59	3. Baggage claim to public/retails services	4.29	High Efficiency	4
Low Importance	4.86	4. Terminal gate to ground transport	4.20	Low Efficiency	3
High Importance	4.89	5. Ground transport to terminal	4.24	Low Efficiency	1
High Importance	4.94	6. Terminal gate to check-in counters	4.39	High Efficiency	2
High Importance	4.95	7. Check-in counters to security screening	4.38	High Efficiency	2
High Importance	5.00	8. Security screening to departure hall	4.47	High Efficiency	2
High Importance	4.99	9. Departure hall to airplane (Enplane)	4.39	High Efficiency	2
	4.88	**Grand Mean**	**4.26**		

Note: Quadrant 1 'Concentrate Here' Quadrant 2 'Keep Up the Good Work'
Quadrant 3 'Low Priority Quadrant 4 'Possible Overkill'

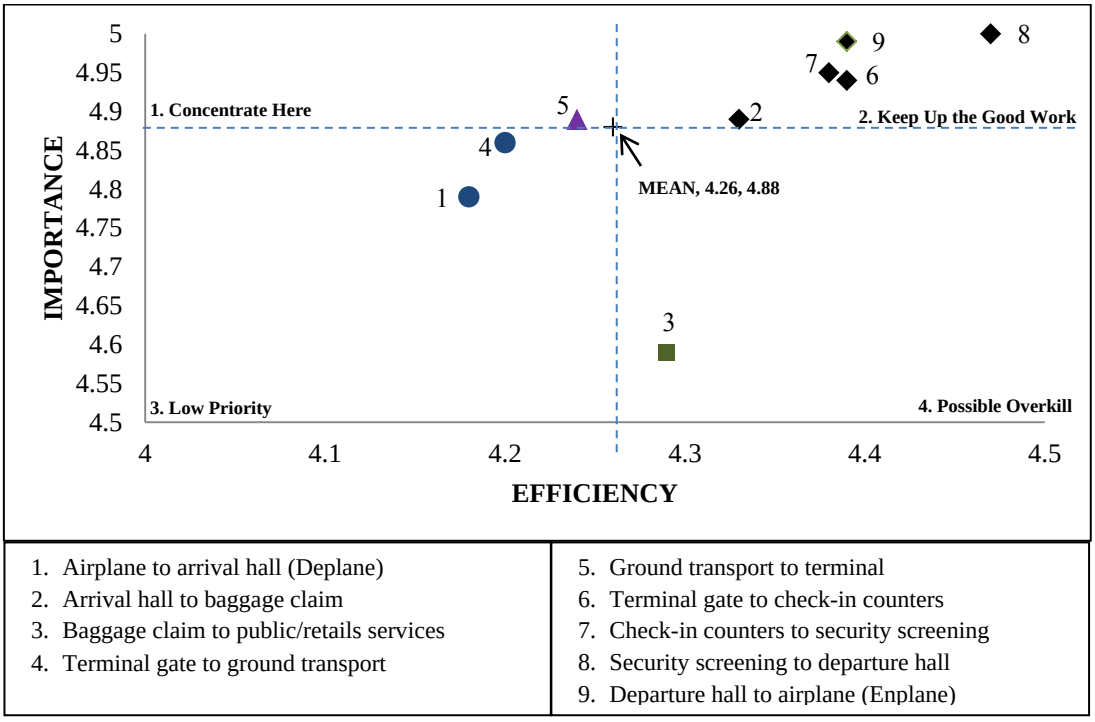


Figure 4.5 IPA Grid Illustrated Airport Operational Efficiency of Operational Procedures

1) Concentrate Here quadrant

The only on procedure that had high importance but low efficiency analyzed by the pattern of IPA was in the departure procedures. The procedure from ground transport to terminal showed that Thailand airports should pay attention to the first step of departing passengers. In addition, this procedure had the 2nd largest negative Gap among nine procedures.

2) Keep Up the Good Work quadrant

Five operational procedures captured in this quadrant were associated with one arrival procedure and four departure procedures. One arrival procedure ‘arrival hall to baggage claim’ and four consecutive departure procedures (i.e., terminal gate to check-in counter, check-in counters to security screening, security screening to departure hall, and departure hall to airplane) were viewed as efficient procedures in the IPA. However, all procedures showed significant result in Gap analysis. Thus, airports cannot purely confine total results of this analysis.

3) Low Priority quadrant

Two arrival procedures were in ‘Low Priority’ quadrant. That is, the efficiency was low whereas the importance was high. They were the first and the last procedures of the arrival: airplane to arrival hall and terminal gate to ground transport.

4) Possible Overkill quadrant

There were not any attributes dropped into this quadrant but there was one operational procedure ‘baggage claim to public/retail services’ ended at this quadrant. The result indicated that this procedure was not really important in the passengers’ eyes compared to what the airport had efficiently performed. This also related to the Gap analysis’ results which showed that this ‘baggage claim to public/retail services’ procedure had the lowest negative Gap compared to all other procedures.

4.5 Thailand Airport Operation Model for the Low-Cost Carriers (Research Objective 4)

To answer the research question ‘How should Thailand airports model their operation for the low-cost carriers?, integrated research results were firstly revealed. Later, the proposed model with passengers’ procedures and operational components were described

4.5.1 Research Results Integration

In order to create proper model on airport operation for the low-cost carriers, various views of research results were mutual analyzed. First, thirty three operational attributes were revealed in a relation to each operational procedures. Also, quantitative based results retrieved from low-cost carrier passengers were integrated analyzed. Last, all research results from three research objectives and eleven research questions were illustrated.

4.5.1.1 Operational attributes and operational procedures

As previously shown in resulting sections, results of airport operational attributes were separately described from those of the operational procedures. However, all operational attributes were properly assigned into each operational procedure differently. That were, process number 1 (airplane to arrival hall) involved 11 attributes, process number 2 (arrival hall to baggage claim) involved 16 attributes, process number 3 (baggage claim to retails/terminal) involved 23 attributes, process number 4 (terminal gate to ground transport) involved 10 attributes, process number 5 (ground transport to terminal) involved 12 attributes, process number 6 (terminal gate to check-in counters) involved 24 attributes, process number 7 (check-in counters to security screening) involved 24 attributes, process number 8 (security screening to departure hall) involved 10 attributes, and process number 9 (departure hall to airplane) involved 15 attributes (Table 4.117).

The operational procedures that comprised the highest numbers of operational attributes (24) belonged to two procedures on the departure as ‘process number 6 terminal gate to check-in counters’ and ‘process number 9 departure hall to airplane’. One of arrival procedures ‘terminal gate to ground transport’ and one of departure procedures ‘security screening to departure hall’ occupied least attributes (10).

In order to compare and confirm the results from two sides ‘procedures’ and ‘attributes’ a researcher brought operational attributes’ values on importance, efficiency, and Gap analysis and put the values into each relevant operational procedures. Then, the average mean scores derived from relevant attributes were calculated. Fore examples, 11 operational attributes’ mean scores were computed and divided by number of attributes (11) for procedure number 1 ‘airplane to arrival hall’. The results also implied areas of high efficient and low efficient attributes within each procedure with the different perspectives (i.e., importance, efficiency, and Gap analysis).

Table 4.117 Operational Procedures and Related Operational Attributes

Operational Procedures	Operational Attributes*																																	No. of Attributes
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
Arrival Procedures																																		
1) Airplane to arrival hall				✓		✓	✓	✓	✓							✓	✓	✓							✓			✓					✓	11
2) Arrival hall to baggage claim			✓	✓	✓	✓	✓	✓	✓									✓	✓	✓		✓		✓	✓			✓				✓	✓	16
3) Baggage claim to retails			✓	✓	✓		✓	✓	✓				✓	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	23
4) Terminal gate to ground transport	✓	✓	✓	✓				✓	✓															✓	✓	✓						✓		10
Departure Procedures																																		
5) Ground transport to terminal	✓	✓	✓	✓				✓	✓	✓												✓		✓	✓	✓						✓		12
6) Terminal gate to check-in counters			✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	24
7) Check-in counters to security screening			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	24
8) Security screening to departure hall							✓	✓	✓	✓					✓										✓	✓		✓				✓	✓	10
9) Departure hall to airplane			✓	✓		✓	✓	✓	✓				✓	✓	✓	✓	✓								✓	✓		✓					✓	15

Note: 1: Accessibility, 2: Parking facilities,, 3: Seat assignments & waiting area, 4: Stairways / lifts / escalators, 5: Information desk, 6: Flight information screen, 7: Broadcasting, 8: Information signs, 9: Airport staff, 10: Security screening, 11: Check-in counters, 12: Baggage check-in, 13: Retail shops, 14: Restaurants / eating facilities, 15: Departure hall, 16: Aerobridges, 17: Passenger steps/ Airfield buses, 18: Arrival hall, 19: Baggage claim, 20: Baggage belts, 21: Baggage drop service, 22: Baggage carts / trolley, 23: Tour / hotel services, 24: Car rental / taxi, 25: Safety measures, 26: Security staff, 27: Health service, 28: Washrooms / toilets, 39: Prayer room, 30: Banks / exchange services, 31: Post office, 32: Public telephone, 33: Wi-Fi / Internet services

On importance, mean scores from cumulative attributes showed the similar way to what resulted from sole operational procedures (Table 4.118). Process number 8 'security screening to departure hall' came up with the 1st important rank. Since associated attributes in the procedures were highly rated individually. Colligated attributes were such as washrooms/toilets, safety measures, security screening, security staff, or information signs.

Table 4.118 Importance Mean Scores of Related Attributes in Each Procedure

Attributes / Procedures	Operational Procedures (see Table 4.117)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Accessibility to the airport	-	-	-	4.97	4.97	-	-	-	-
2. Parking facilities	-	-	-	4.38	4.38	-	-	-	-
3. Seat assignment & waiting area		4.77	4.77	4.77	4.77	4.77	4.77	-	4.77
4. Stairway / lifts / escalators	4.56	4.56	4.56	4.56	4.56	4.56	4.56	-	4.56
5. Information desk / counters	-	4.71	4.71	-	-	4.71	4.71	-	-
6. Flight information screen	5.15	5.15	-	-	-	5.15	5.15	-	5.15
7. Broadcasting / announcement	4.80	4.80	4.80	-	-	4.80	4.80	4.80	4.80
8. Information signs	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22
9. Airport staff	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08	5.08
10. Security screening	-	-	-	-	5.38	5.38	-	5.38	-
11. Check-in counters	-	-	-	-	-	5.23	5.23	-	-
12. Baggage check-in	-	-	-	-	-	-	5.18	-	-
13. Retail shops	-	-	3.95	-	-	3.95	3.95	-	3.95
14. Restaurant / eating facilities	-	-	4.22	-	-	4.22	4.22	-	4.22
15. Departure hall	-	-	-	-	-	-	-	4.77	4.77
16. Aerobridges / connecting gate	4.78	-	-	-	-	-	-	-	4.78
17. Passenger steps / airfield buses	4.90	-	-	-	-	-	-	-	4.90
18. Arrival hall	4.68	4.68	-	-	-	-	-	-	-
19. Baggage claiming system	-	4.99	4.99	-	-	-	-	-	-
20. Baggage belts (arrival)	-	4.90	4.90	-	-	-	-	-	-
21. Baggage drop service	-	-	4.51	-	-	4.51	4.51	-	-
22. Baggage carts / trolley	-	4.74	4.74	-	4.74	4.74	4.74	-	-
23. Tour / hotel services	-	-	4.07	-	-	4.07	4.07	-	-
24. Car rental facilities / taxi	-	4.13	4.13	4.13	4.13	4.13	4.13	-	-
25. Safety measures	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29	5.29
26. Security staff	-	-	5.30	5.30	5.30	5.30	5.30	5.30	5.30
27. Health services	-	-	4.97	-	-	4.97	4.97	-	-
28. Washrooms / toilets	5.42	5.42	5.42	-	-	5.42	5.42	5.42	5.42
29. Prayer room	-	-	3.85	-	-	3.85	3.85	-	-
30. Banks / exchange services	-	-	4.59	-	-	4.59	4.59	-	-

Table 4.118 (Continued)

Attributes / Procedures	Operational Procedures (see Table 4.117)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
31. Post office	-	-	3.80	-	-	3.80	3.80	-	-
32. Public telephone	-	4.00	4.00	4.00	4.00	4.00	4.00	4.00	-
33. Wi-Fi / internet services	5.21	5.21	5.21	-	-	5.21	5.21	5.21	5.21
Number of Related Attributes	11	16	23	10	12	24	24	10	15
Relevant Attributes' Mean Scores	**5.01**	**4.85**	**4.66**	**4.77**	**4.82**	**4.71**	**4.70**	**5.05**	**4.89**
Ranking from Relevant Attributes	2	4	9	6	5	7	8	1	3
Procedures' Mean Scores	**4.79**	**4.89**	**4.59**	**4.86**	**4.89**	**4.94**	**4.95**	**5.00**	**4.99**
Ranking from Procedures	7	5	8	6	5	4	3	1	2

In terms of results on efficiency mean scores and Gap analysis, most of compound attributes' mean scores did not went through the same directions as the mean scores of operational procedures' mean scores themselves. For instance, on efficiency, process number 8 ranked the 1st efficient procedure from its mean scores evaluated by low-cost carrier passengers whereas the 8th procedure got the 5th rank from the collective mean scores of 10 attributes (Table 4.119).

Table 4.119 Efficiency Mean Scores of Related Attributes in Each Procedure

Attributes / Procedures	Operational Procedures (see Table 4.117)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Accessibility to the airport	-	-	-	4.41	4.41	-	-	-	-
2. Parking facilities	-	-	-	3.92	3.92	-	-	-	-
3. Seat assignment & waiting area		4.18	4.18	4.18	4.18	4.18	4.18	-	4.18
4. Stairway / lifts / escalators	4.20	4.20	4.20	4.20	4.20	4.20	4.20	-	4.20
5. Information desk / counters	-	4.07	4.07	-	-	4.07	4.07	-	-
6. Flight information screen	4.25	4.25	-	-	-	4.25	4.25	-	4.25
7. Broadcasting / announcement	4.26	4.26	4.26	-	-	4.26	4.26	4.26	4.26
8. Information signs	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31
9. Airport staff	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34
10. Security screening	-	-	-	-	4.46	4.46	-	4.46	-
11. Check-in counters	-	-	-	-	-	4.56	4.56	-	-
12. Baggage check-in	-	-	-	-	-	-	4.49	-	-
13. Retail shops	-	-	3.75	-	-	3.75	3.75	-	3.75
14. Restaurant / eating facilities	-	-	3.69	-	-	3.69	3.69	-	3.69
15. Departure hall	-	-	-	-	-	-	-	4.12	4.12
16. Aerobridges / connecting gate	4.24	-	-	-	-	-	-	-	4.24

Table 4.119 (Continued)

Attributes / Procedures	Operational Procedures (see Table 4.117)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
17. Passenger steps / airfield buses	3.92	-	-	-	-	-	-	-	3.92
18. Arrival hall	4.17	4.17	-	-	-	-	-	-	-
19. Baggage claiming system	-	4.27	4.27	-	-	-	-	-	-
20. Baggage belts (arrival)	-	4.21	4.21	-	-	-	-	-	-
21. Baggage drop service	-	-	4.09	-	-	4.09	4.09	-	-
22. Baggage carts / trolley	-	4.47	4.47	-	4.47	4.47	4.47	-	-
23. Tour / hotel services	-	-	4.01	-	-	4.01	4.01	-	-
24. Car rental facilities / taxi	-	4.07	4.07	4.07	4.07	4.07	4.07	-	-
25. Safety measures	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43	4.43
26. Security staff	-	-	4.36	4.36	4.36	4.36	4.36	4.36	4.36
27. Health services	-	-	4.17	-	-	4.17	4.17	-	-
28. Washrooms / toilets	4.30	4.30	4.30	-	-	4.30	4.30	4.30	4.30
29. Prayer room	-	-	4.08	-	-	4.08	4.08	-	-
30. Banks / exchange services	-	-	4.17	-	-	4.17	4.17	-	-
31. Post office	-	-	4.02	-	-	4.02	4.02	-	-
32. Public telephone	-	4.05	4.05	4.05	4.05	4.05	4.05	4.05	-
33. Wi-Fi / internet services	2.49	2.49	2.49	-	-	2.49	2.49	2.49	2.49
Number of Related Attributes	11	16	23	10	12	24	24	10	15
Relevant Attributes' Mean Scores	**4.08**	**4.13**	**4.09**	**4.23**	**4.27**	**4.12**	**4.12**	**4.11**	**4.06**
Ranking from Relevant Attributes	7	3	6	2	1	4	4	5	8
Procedures' Mean Scores	**4.18**	**4.33**	**4.29**	**4.20**	**4.24**	**4.39**	**4.38**	**4.47**	**4.39**
Ranking from Procedures	8	4	5	4	6	2	3	1	2

Whatever extent, the average mean scores between those of compound attributes' and the operational procedures' were not much different. On Gap analysis, for examples, procedure number 4 'terminal gate to ground transport' had different rank from both different results (procedure rank =1, collective attributes rank = 9) but did not had much differences mean Gap scores compared to other procedures (procedures = -0.66, 10 attributes = -0.54) (Table 4.120). More importantly, the total pictures of results shown in matrix were advantageous for holistic analysis since the results of both procedures and affiliated attributes were detailed.

Table 4.120 Gap Mean Scores of Related Attributes in Each Procedure

Attributes / Procedures	Operational Procedures (see Table 4.117)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1. Accessibility to the airport	-	-	-	-0.56	-0.56	-	-	-	-
2. Parking facilities	-	-	-	-0.46	-0.46	-	-	-	-
3. Seat assignment & waiting area		-0.59	-0.59	-0.59	-0.59	-0.59	-0.59	-	-0.59
4. Stairway / lifts / escalators	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-0.36	-	-0.36
5. Information desk / counters	-	-0.64	-0.64	-	-	-0.64	-0.64	-	-
6. Flight information screen	-0.90	-0.90	-	-	-	-0.90	-0.90	-	-0.90
7. Broadcasting / announcement	-0.54	-0.54	-0.54	-	-	-0.54	-0.54	-0.54	-0.54
8. Information signs	-0.91	-0.91	-0.91	-0.91	-0.91	-0.91	-0.91	-0.91	-0.91
9. Airport staff	-0.74	-0.74	-0.74	-0.74	-0.74	-0.74	-0.74	-0.74	-0.74
10. Security screening	-	-	-	-	-0.92	-0.92	-	-0.92	-
11. Check-in counters	-	-	-	-	-	-0.67	-0.67	-	-
12. Baggage check-in	-	-	-	-	-	-	-0.69	-	-
13. Retail shops	-	-	-0.20	-	-	-0.20	-0.20	-	-0.20
14. Restaurant / eating facilities	-	-	-0.53	-	-	-0.53	-0.53	-	-0.53
15. Departure hall	-	-	-	-	-	-	-	-0.65	-0.65
16. Aerobridges / connecting gate	-0.54	-	-	-	-	-	-	-	-0.54
17. Passenger steps / airfield buses	-0.98	-	-	-	-	-	-	-	-0.98
18. Arrival hall	-0.51	-0.51	-	-	-	-	-	-	-
19. Baggage claiming system	-	-0.72	-0.72	-	-	-	-	-	-
20. Baggage belts (arrival)	-	-0.69	-0.69	-	-	-	-	-	-
21. Baggage drop service	-	-	-0.42	-	-	-0.42	-0.42	-	-
22. Baggage carts / trolley	-	-0.27	-0.27	-	-0.27	-0.27	-0.27	-	-
23. Tour / hotel services	-	-	-0.06	-	-	-0.06	-0.06	-	-
24. Car rental facilities / taxi	-	-0.06	-0.06	-0.06	-	-0.06	-0.06	-	-
25. Safety measures	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86
26. Security staff	-	-	-0.94	-0.94	-0.94	-0.94	-0.94	-0.94	-0.94
27. Health services	-	-	-0.80	-	-	-0.80	-0.80	-	-
28. Washrooms / toilets	-1.12	-1.12	-1.12	-	-	-1.12	-1.12	-1.12	-1.12
29. Prayer room	-	-	0.23	-	-	0.23	0.23	-	-
30. Banks / exchange services	-	-	-0.42	-	-	-0.42	-0.42	-	-
31. Post office (P >.05)	–	–	~~0.22~~	–	–	~~0.22~~	~~0.22~~	–	–
32. Public telephone	-	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-
33. Wi-Fi / internet services	-2.72	-2.72	-2.72	-	-	-2.72	-2.72	-2.72	-2.72
Number of Related Attributes	11	16	22	10	12	23	23	10	15
Relevant Attributes' Mean Scores	**-0.93**	**-0.72**	**-0.61**	**-0.54**	**-0.55**	**-0.63**	**-0.62**	**-0.94**	**-0.84**
Ranking from Relevant Attributes	2	4	7	9	8	5	6	1	3
Procedures' Mean Scores	**-0.61**	**-0.56**	**-0.30**	**-0.66**	**-0.65**	**-0.56**	**-0.57**	**-0.53**	**-0.64**
Ranking from Procedures	4	6	8	1	2	6	5	7	3

4.5.1.2 Overall results on operational procedures and attributes

Another beneficial view of result illustration was a holistic view of all related results to each operational attribute and each operational procedure. Quantitative based results were mutual analyzed and rated the priority of improvement. Importance mean & levels, efficiency mean & levels, Gap analysis results, as well as specified quadrant from IPA were mutual considered in identifying levels of urgency in terms of improvements or concerns needed. However, to identify the urgency levels of each operational attribute, a researcher also concerned on the interview results which were qualitative based data retrieved from low-cost carrier passengers, low-cost carrier staff, and airport executives. For instance, the two stars priority of aerobridges were not pretty much compared to the maximum five stars but its' urgency levels became medium instead of low at the urgency levels since it was often mentioned during the interviews.

Among nine processes of operational procedures, three of them were seemed to be at the high priority, two procedures were neutral, and four of them were at the low improvement needed urgency (Table 4.121, Figure 4.6). On arrival procedures, the 4th process 'terminal gate to ground transport' was identified as high urgency. At the high urgency level, 'ground transport to terminal' and 'departure hall to airplane', the 5th and the 9th procedures appeared in the departure, were recognized as well. Undoubtedly, most of attributes associated to those three procedures were analyzed as high urgent attributes over the medium or the low. The high urgent attributes were such as information signs, safety measures, security staff, washrooms, or parking facilities. The procedure that might be less concerned was the 3rd procedure which belonged to the arrival 'baggage claim to retails'. Even there were 23 operational attributes involved in this procedure; most of them were not the core services or facilities on air passengers' process. Instead, more than 50% of the 23 attributes were assigned as low urgent attributes (Figure 4.7).

Table 4.121 Overall Results on Operational Procedure

Nine Procedures	Importance		Efficiency		Gap		IPA	Overall	
	Mean	Level	Mean	Level	E-I	Level		Priority	Urgency
1. Airplane to arrival hall (Deplane)	4.79	5	4.18	4	-0.61	Medium	Low Priority	✡✡	Low
2. Arrival hall to baggage claim	4.89	5	4.33	4	-0.56	Medium	Good Work	✡✡✡	Medium
3. Baggage claim to public/retails services	4.59	5	4.29	4	-0.3	Low	Possible Overkill	✡	Low
4. Terminal gate to ground transport	4.86	5	4.2	4	-0.66	High	Low Priority	✡✡✡✡	High
5. Ground transport to terminal	4.89	5	4.24	4	-0.65	High	Concentrate Here	✡✡✡✡	High
6. Terminal gate to check-in counters	4.94	5	4.39	4	-0.56	Low	Good Work	✡✡	Low
7. Check-in counters to security screening	4.95	5	4.38	4	-0.57	Medium	Good Work	✡✡✡	Medium
8. Security screening to departure hall	5.00	5	4.47	4	-0.53	Low	Good Work	✡✡	Low
9. Departure hall to airplane (Enplane)	4.99	5	4.39	4	-0.64	High	Good Work	✡✡✡✡	High

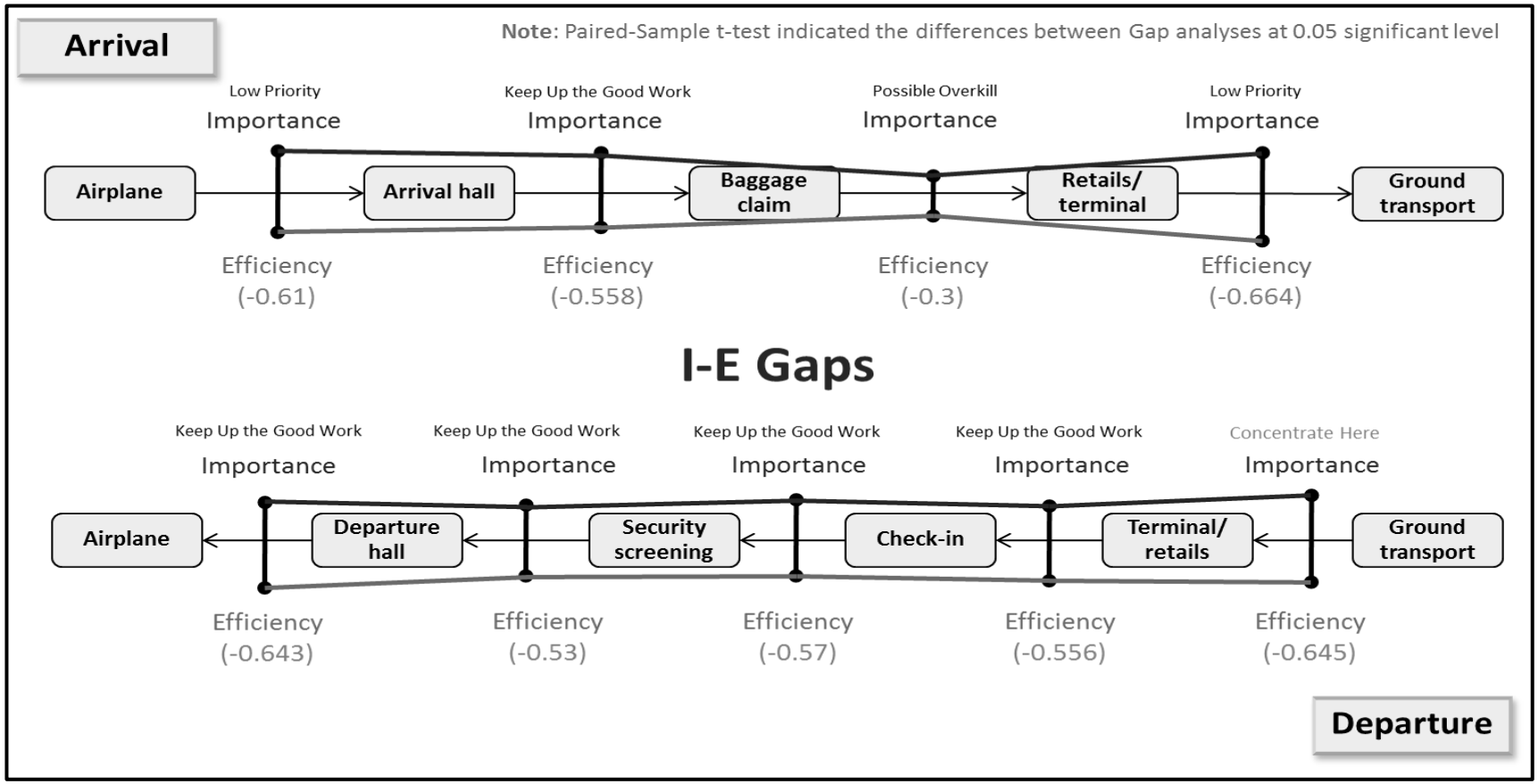


Figure 4.6 IPA and Gap Analysis Results on Nine Operational Procedures

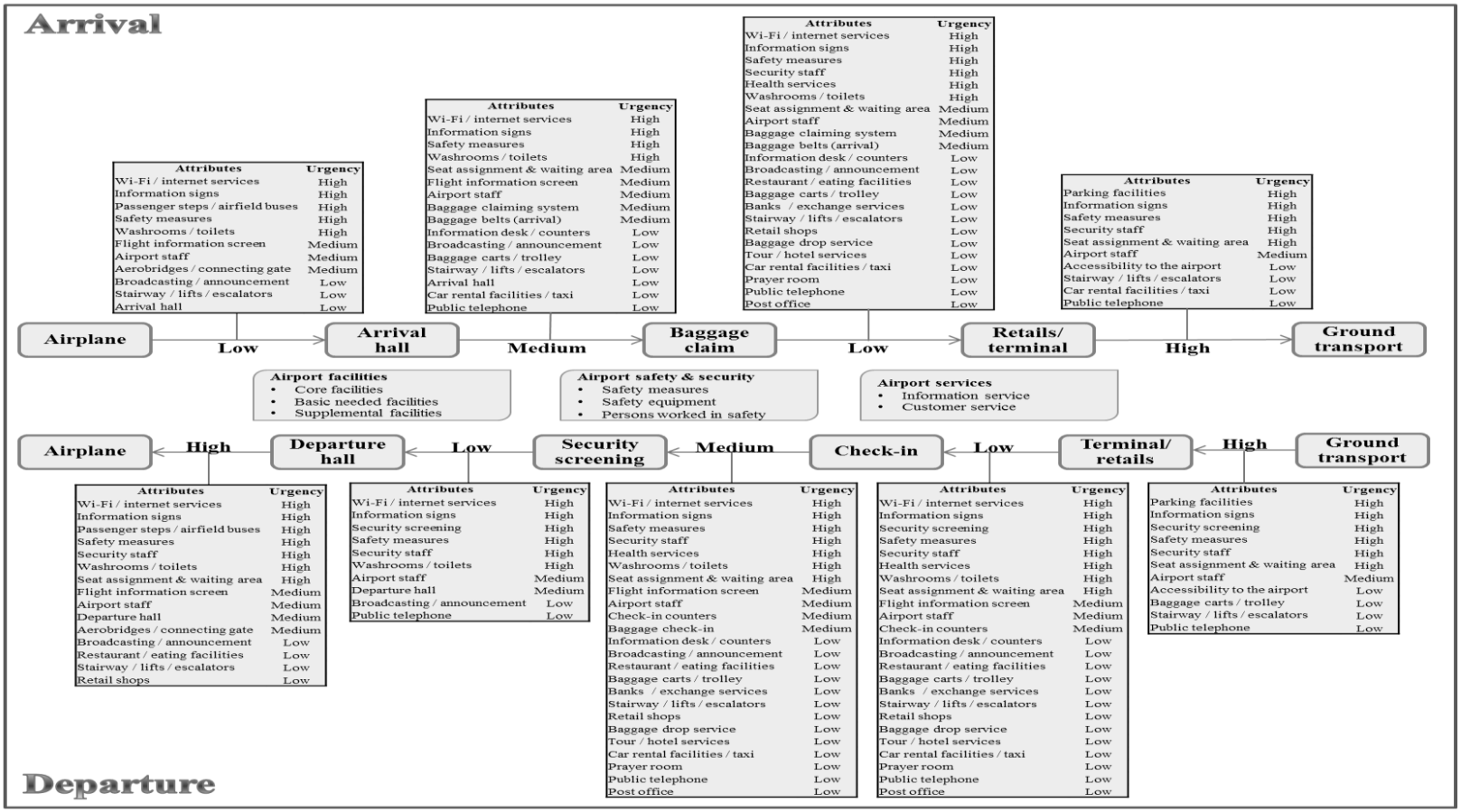


Figure 4.7 Urgency Levels of Improvement Needs on Operational Procedures and Operational Attributes

However, procedures proposed to be in a low urgency group did not mean that those procedures should be ignored. All procedures must be joint concerned to make all procedures smooth, holistically. Similar to the overall results on operational procedures, results of 33 operational attributes were summarized. The whole pictures of operational attributes demonstrated 10 attributes at high urgency, 8 attributes at medium urgency, and 15 attributes at low urgency (Table 4.122). The co-analysis of importance mean & levels, efficiency mean & levels, Gap results, and IPA illustrated that attributes colligated to the high urgent group composed of parking facilities, seat assignments & waiting area, information signs, security screening, passenger steps/airfield buses, safety measures, security staff, health services, washrooms/toilets, and Wi-Fi services. In order to outline the operation model, significant issues on safety & security, core facilities, and basic needed facilities must be primarily considered. However, among them, Wi-Fi services –supplemental facilities—had 5 stars on priorities. Both survey and interview method caused the similar results on this issue. Doubtlessly, people nowadays always were with information technologies such as smart phones or tablets where internet connection was necessary.

The 8 attributes rated at the medium levels of urgency comprised of those facilities & services needed for processing passengers' flying trip. Flight information screen, airport staff, check-in counters, baggage check-in, departure hall, aerobridges/connecting gates, baggage claiming systems, and baggage belts on the arrival had to be taken into account when designing the model of airport operation.

4.5.1.3 Cumulative results from all research objectives

In this section, four groups of research results were summarized. The first three groups were research results tided in three research objectives 'operational efficiencies of Thailand airport from the view of low-cost carriers', 'levels of importance and efficiency of Thailand airports' operational attributes and operational procedures', and 'low-cost carrier passengers' requirements toward Thailand airports' operations. In addition, the results on importance-efficiency quadrants analyzed through the IPA were combined in this section (Figure 4.8).

Table 4.122 Overall Results on Operational Attributes

33 Attributes	Importance		Efficiency		Gap		IPA	Urgency	
	Mean	Level	Mean	Level	E-I	Level		Priority	Levels
1. Accessibility to the airport	4.97	5	4.41	4	-0.567	Low	Good Work	✡✡	Low
2. Parking facilities	4.38	6	3.92	4	-0.791	High	Low Priority	✡✡✡✡	High
3. Seat assignment & waiting area	4.77	4	4.18	4	-0.586	Medium	Concentrate Here	✡✡✡✡	High
4. Stairway / lifts / escalators	4.56	4	4.2	4	-0.353	Low	Low Priority	✡	Low
5. Information desk / counters	4.71	4	4.07	4	-0.700	Medium	Low Priority	✡✡	Low
6. Flight information screen	5.15	5	4.25	4	-0.901	High	Good Work	✡✡✡	Medium
7. Broadcasting / announcement	4.80	4	4.26	4	-0.534	Low	Good Work	✡✡	Low
8. Information signs	5.22	5	4.31	4	-0.908	High	Good Work	✡✡✡✡	High
9. Airport staff	5.08	5	4.34	4	-0.740	High	Good Work	✡✡✡	Medium
10. Security screening	5.38	5	4.46	4	-0.920	High	Good Work	✡✡✡✡	High
11. Check-in counters	5.23	5	4.56	5	-0.667	Medium	Good Work	✡✡✡	Medium
12. Baggage check-in	5.18	5	4.49	5	-0.688	Medium	Good Work	✡✡✡	Medium
13. Retail shops	3.95	4	3.75	4	-0.245	Low	Low Priority	✡	Low
14. Restaurant / eating facilities	4.22	4	3.69	4	-0.586	Medium	Low Priority	✡✡	Low
15. Departure hall	4.77	5	4.12	4	-0.652	Medium	Concentrate Here	✡✡✡	Medium
16. Aerobridges / connecting gate	4.78	5	4.24	4	-0.537	Low	Good Work	✡✡	Medium
17. Passenger steps / airfield buses	4.90	5	3.92	4	-1.000	High	Concentrate Here	✡✡✡✡	High
18. Arrival hall	4.68	5	4.17	4	-0.513	Low	Low Priority	✡	Low
19. Baggage claiming system	4.99	5	4.27	4	-0.723	Medium	Good Work	✡✡✡	Medium
20. Baggage belts (arrival)	4.90	5	4.21	4	-0.688	Medium	Concentrate Here	✡✡✡	Medium
21. Baggage drop service	4.51	5	4.09	4	-0.490	Low	Low Priority	✡	Low

Table 4.122 (Continued)

33 Attributes	Importance		Efficiency		Gap		IPA	Urgency	
	Mean	Level	Mean	Level	E-I	Level		Priority	Levels
22. Baggage carts / trolley	4.74	5	4.47	5	-0.275	Low	Good Work	✡✡	Low
23. Tour / hotel services	4.07	4	4.01	4	-0.292	Low	Low Priority	✡	Low
24. Car rental facilities / taxi	4.13	4	4.07	4	-0.332	Low	Low Priority	✡	Low
25. Safety measures	5.29	6	4.43	4	-0.863	High	Good Work	✡✡✡✡	High
26. Security staff	5.30	6	4.36	4	-0.948	High	Good Work	✡✡✡✡	High
27. Health services	4.97	6	4.17	4	-0.870	High	Concentrate Here	✡✡✡✡	High
28. Washrooms / toilets	5.42	6	4.3	4	-1.123	High	Good Work	✡✡✡✡	High
29. Prayer room	3.85	4	4.08	4	-0.316	Low	Low Priority	✡	Low
30. Banks / exchange services	4.59	5	4.17	4	-0.639	Medium	Low Priority	✡✡	Low
31. Post office	3.80	4	4.02	4	-0.129	Low	Low Priority	✡	Low
32. Public telephone	4.00	4	4.05	4	-0.330	Low	Low Priority	✡	Low
33. Wi-Fi / internet services	5.21	6	2.49	1	-2.716	High	Concentrate Here	✡✡✡✡✡	High

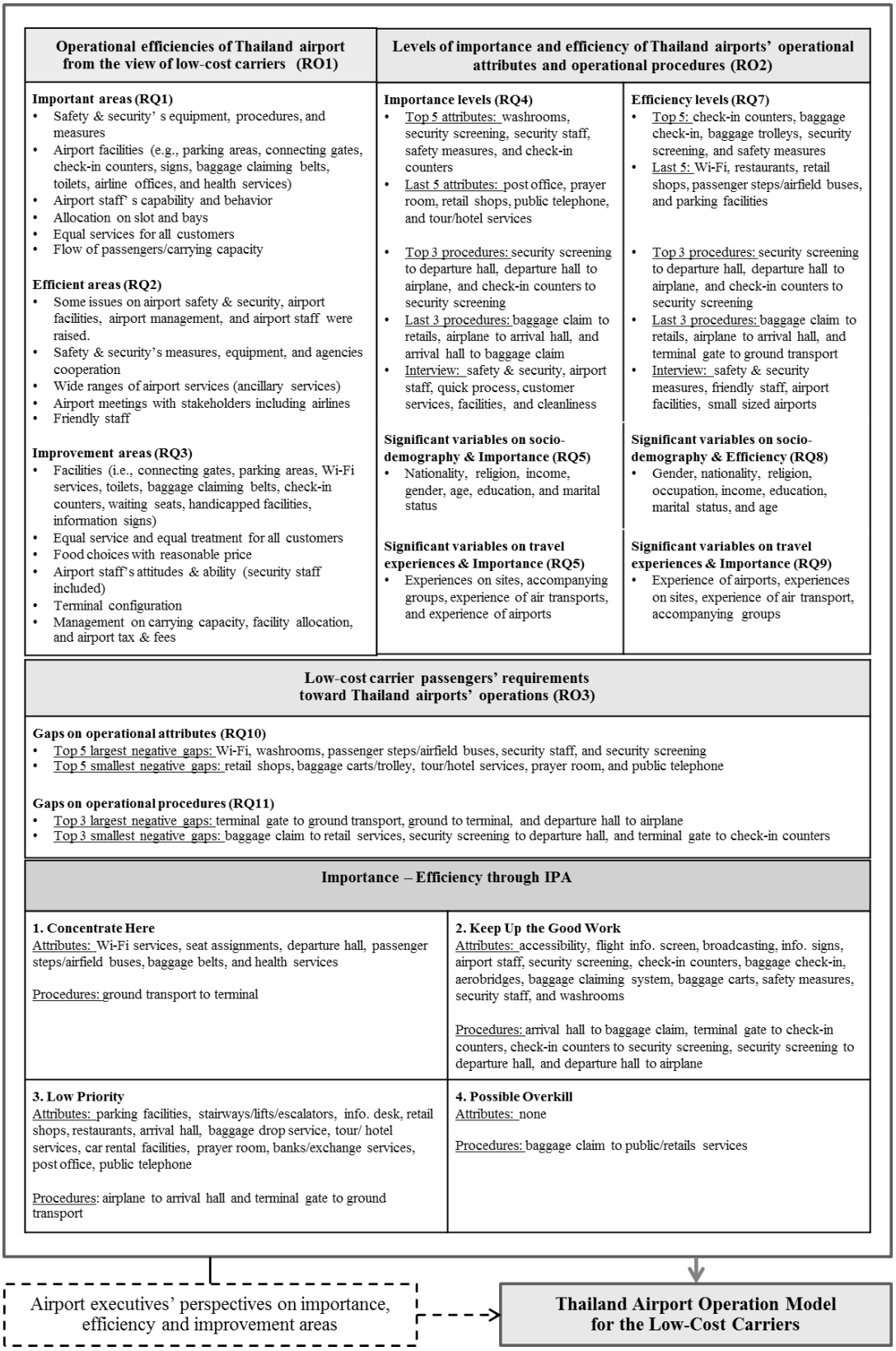


Figure 4.8 Cumulative Information for Model Creation

1) Significant results from research objective 1 (RO1)

The interviewed results depicted three research questions: important areas, efficient areas, and improvement areas of Thailand airports perceived by low-cost carrier staff. Areas of importance were about safety & security, airport facilities, airport staff's capability & behavior, slot & bay allocation, equal services of airports, and carrying capacity. For efficiencies, some issues on safety & security, airport facilities, airport management & staff were also mentioned. Measures on safety, agencies cooperation, wide ranges of services, airport meetings, and friendly staff were included. However areas to be improved were also involved on the same issues mentioned in importance & efficiency in different ways. Numbers of connecting gates, parking facilities, waiting seats, or baggage claim belts were perceived to be mediocre areas. In addition, equal customer services, reasonable food price, airport staff's capability, and management on airport space & facilities were required.

2) Significant results from research objective 2 (RO2)

Six research questions were involved underneath the 2nd objective 'to investigate levels of importance and efficiency of Thailand airports' operational attributes and operational procedures'.

(1) Importance levels

Top 5 highly rated attributes on importance were washrooms, security screening, security staff, safety measures, and check-in counters. Least importance attributes belonged to post office, prayer room, retail shops, public telephone, and tour/ hotel services. Top 3 important operational procedures were 'baggage claim to retails', airplane to arrival hall', and 'arrival hall to baggage claim'.

(2) Significant socio-demographic variables on importance levels

Seven of eight socio-demographic variables show significant results on airport operational attributes in dissimilar ways. In descending orders to number of significant variables, nationality, religion, income, gender, age, education, and marital status showed some significant results.

(3) Significant travel experiences variables on importance levels

All proxies in travel experiences oriented variables also had significant testing results on importance levels. Different experiences on sites, accompanying groups, experience of air transports, and experience of airports showed different results on importance levels significantly.

(4) Efficiency levels

Cheek-in counters, baggage check-in, baggage trolley, security screening, and safety measures generated the top 5 high efficiency whereas Wi-Fi services, restaurants, retails, passenger steps/airfield buses, and parking facilities obtained the lowliest inefficient attributes.

(5) Significant socio-demographic variables on efficiency levels

Alike the testing results on importance, all variables on socio-demography presented significant results on efficiency levels. Occupation showed some results on efficiency whereas there was nothing shown in importance side. Gender mostly rendered the results followed by nationality, religion, occupation, income, education, marital status, and age.

(6) Significant travel experiences variables on efficiency levels

In similar to what resulted in importance's tests, all variables on travel experiences rendered significant results on efficiency levels. Not experiences on sites but experience of airports mostly had significant effect on efficiency levels antecedent experiences on sites, experience of air transport, and accompanying groups.

3) Significant results from research objective 3 (RO3)

On the 3rd research objective, the differences between efficiency mean and importance mean were analyzed to find significant gaps reflecting passengers' requirements. Top 5 attributes that had largest negative gaps were Wi-Fi services, washrooms, passenger steps/airfield buses, security staff, and security screening. Three operational procedures that had largest negative gaps were

‘terminal gate to ground transport’, ‘ground transport to terminal’, and ‘departure hall to airplane’.

4) Significant results from IPA

According to four quadrants analyzed through the IPA, there were operational attributes dropped into three of them except ‘possible overkill’ quadrant. Six operational attributes of ‘concentrate here’ quadrant (high importance & low efficiency) were Wi-Fi services, seat assignments, departure hall, passenger steps/airfield buses, baggage belts, and health services. Thirteen operational attributes belong the ‘low priority’ quadrant (low importance & low efficiency) were parking facilities, stairways/lifts/escalators, information desk/counters, retail shops, restaurants, arrival hall, baggage drop service, tour/hotel services, car rental facilities, prayer room, banks/exchange services, post office, and public telephone. The rest fourteen attributes fit in ‘keep up the good work’ quadrant which reflected high importance and high efficiency.

4.5.2 Thailand Airport Operation Model for the Low-Cost Carriers

The model of airport operation for the low-cost carriers has been developed from the urgency results of improvement needed on operational procedures and operational attributes previously shown in Figure 4.6. The model has illustrated with two main compositions. Operational procedures including arrival and departure are firstly described and four operational components: safety & security, facilities & equipment, services & staff, and infrastructure are later delineated. (Figure 4.9).

4.5.2.1 Operational procedures

Nine procedures on passengers’ processing steps were stretched in order to demonstrate the linkage of operational procedures and operational attributes that airports should concern on their operations.

1) Arrival Procedures

Arrival procedures are less important than departure procedures with since their shorter processes passengers need time spent at the airports. However, in order to make the arrival procedures more efficient, crucial elements must be considered throughout the procedures.

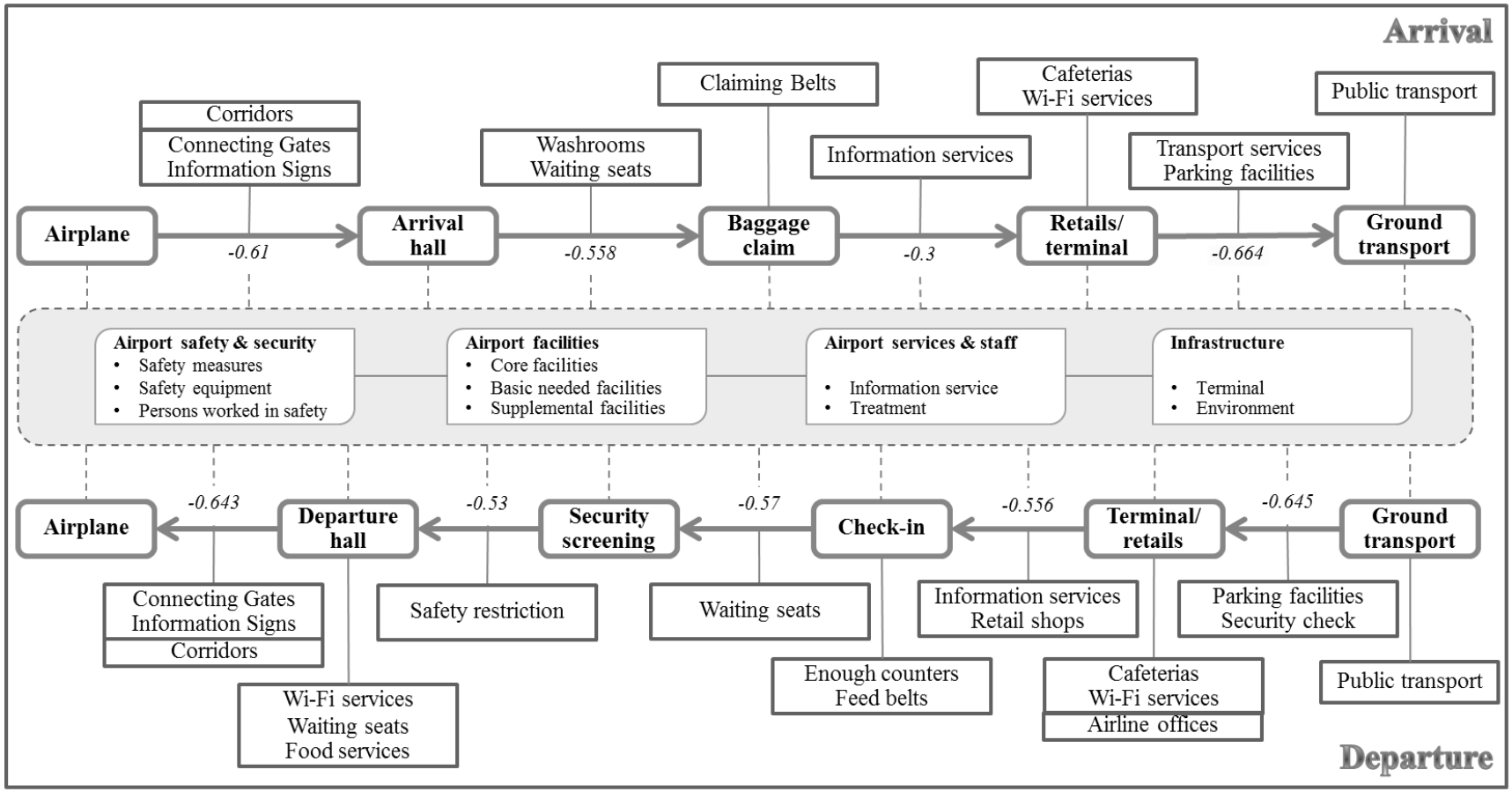


Figure 4.9 Thailand Airport Operation Model for the Low-Cost Carriers

Deplaned passengers as well as the low-cost carriers require connecting gates over using remote bays or airport shuttle buses. They need to be convenient and quick on their process. Especially, the low-cost carriers need the short turnaround time as much as possible in or der to save their costs and satisfy their passengers. Low-cost carriers do not want their deplaning passengers to spend much time and do not want enplaning passengers to be delayed. More, information signs directed to the arrival hall and to baggage claiming belts are necessary. In order to generate good flow of arrival and departing passengers, the corridors should be well designed and managed in order not to mix those two groups of passengers. Once the passengers arrived at the arrival hall, washrooms and waiting seats are required. Since the loaded baggage was not always ready for passengers to take, arrival passengers need to take a bit time waiting for their stuff by finding seats for waiting. The point of consideration on baggage claim is about the sufficiency and the allocation of baggage belts. Airports need to provide enough baggage belts for all flights operated at the airports and do not need to specify the belt of low-cost with a specific belt with the same position. Equally allocated should be considered to all flights.

In the process of leaving the baggage claim to the retails/terminal, information services are notable elements for the passengers, especially foreigners and new incomers to airports. Clear and informed signs as well as airport information services are required. It's good to have the information signs with multi-languages and the information counters closed to the arrival hall exit. In addition, providing information services through airport help staff that can use foreign languages are advantageous. Inside the terminal, arrival passengers might not spend much time at airports for retail shopping but services on Wi-Fi and cafeterias (cheap food services) are necessary. Rental facilities on transport are necessary for the arrival passengers but the price charged should be reasonable for the low-cost carrier passengers to afford. Parking facilities are also needed for the arrival passengers who had an overnight parking at the airport. However, the overnight parked cars are needed to be in a good condition and safe once the passengers arrived. Airport might have to concern on the choices of ground transportation, especially of public transports over rental services for Thai passengers. Good cooperation between airports and transport agencies will help.

2) Departure Procedures

Operational process started from ground transport to enplaning for the departures procedures. There seemed to be more details and more importance on departure over the arrival. LCC passengers concern more on the processes between ground transport to terminal and from departure hall to airplane.

Good accessibility was expected by passengers to be one of airport responsibility to better provide or cooperate. Most airports are not situated along the main road that public transports are available, better choices of public transport can facilitate departure passengers. Parking facilities are extremely required for departing passengers. Some of them need overnight parks whereas the others have their relatives to park the vehicles while helping departing passengers to process their flights inside the terminal. Before getting into the terminal, security check is fruitful for all airport incomers.

For departing passengers, ancillary services such as cafeterias, Wi-Fi, information, and retails are necessary in public area of the terminal. The restaurants provided inside airport terminal are not desired by LCC passengers since the high price so easy going on eating facilities are preferable. In terms of the low-cost carriers, airline office space and locations must be well prepared and assigned. Airline offices where occupy enough spaces and are situated not far from the check-in counters will facilitate airlines' tasks. Good clear and informed information signs will help to facilitate airport passengers as well as to minimize numbers of passengers asking on directions at information counters. Retail shops on souvenir and general goods are expected to be varied.

At the process of check-in, enough counters for a high number of the growing low-cost flights must be concerned as well as the available check-in counters with feed belts. Feed belts at check-in can facilitate the low-cost carriers to process their flight and baggage check-in. Departing passengers have choices to go directly to a departure hall or to spend time for retails inside the terminal so the latter need enough seats for departing passengers to wait for their flight in public areas. Once the passengers go to the secured side, strictness on security screening is the point of concern. Most of departing passengers spend most of their departure time

inside the departure hall. Airports might have to consider on enough waiting seats, food services, and Wi-Fi which is mostly asked by passengers.

The process between a departure hall to airplane tended to be important for both low-cost carriers and the passengers. Information signs screen on gate numbers and flights must be properly provided. It should be noticeable for everyone. Similar to the first process of the arrival procedures, connecting gates and good management on corridors are distinctive points for the low-cost carriers.

4.5.2.2 Operational components

As researched, four meaningful components necessitated to overall airport operational procedures for the low-cost carriers are safety & security, facilities & equipment, services & staff, and infrastructure. Each component comprises of subordinate elements and allied principles.

1) Safety & security

Normally, safety & security are required by law in the aviation sector. Both airlines and airports have to be strict on rules of safety followed the ICAO. In order to serve low-cost carriers and their passengers, safety & security is also the highest concerning point like the others. A number of LCC staff working at airport for flight operation needs to have safe working place. Also, the lesser amount paid for air ticket did not make low-cost carrier passengers lesser required on safety. Moreover, Low-cost passengers have grown along with higher number of air passengers so risks on dangers would be also high. However, the airport itself, as a service provider, must strictly concern on this issue to make all related airport users safe & secured. In terms of dealing with this issue, elements and principles must be considered.

(1) Measures

Airport must be strict on safety & security measures as planned so that all airport people and airport users must have equal right to be safe. Measures on safety & security can reflect on security check points, numbers of security staff, caution signs, fire unit, or even designed passages. Since the protection is better than problem solving especially in the sense of safety, safety measures can start at the entrance of the airport. Due to the current uncertainties on crimes or terrorism, providing security check at the airports' entrance can assured airport

customers. For examples, at Hat Yai international airport, passengers were satisfied with that good measure. However, it would be good enough when all airports provide security check points at the terminal entrance. Not all the world airports have done on this, but it can increase assurance and satisfaction for all airport users. If airports can assure their customers at first sight, they must be happy during their working time or their air trips.

(2) Equipment

Standard safety equipment and safety machines must always be in a good condition and enough for serving. Airports have to regularly check all equipment as scheduled. Checked date specified on fire extinguisher can approve a good condition of safety equipment. Moreover, numbers of security check points relate to number s of equipment and personnel. Airports must realize when security check points are needed to be added since the higher number of airport passengers.

(3) Personnel

Even most of safety & security measures and equipment are well planned and functioned, safety & security tasks will not successful without personnel. Airports must assign well-trained and qualified staff working on monitors of scanning machines. Professional and experienced persons can help detecting on prohibited articles. Also, all safety & security related staff must be well trained. Especially, personnel working with a hand scanner cannot overlook any incomers. Another point is about personnel gender. It would be more appropriate if male staff has to check on males and female staff has to check on females. Most of hand scanned staff currently working at Thailand airports are females but they have to check all genders with the hand scanner and their hands touched. This issue was ignored by many airports but it will give higher benefits to airports and customers.

Two principles are necessary on delivering safety services: standard and strictness. Measures, equipment, and personnel involved in safety & security must follow the specified standard, process, or qualifications. On safety's tasks, being strict will not harmful anybody but will fulfill the safety assurance instead. There must not be any exception on safety restriction. All people, even airport executives must be strictly checked or screened fairly.

2) Facilities & equipment

Facilities & equipment is the must component of airport operation. In order to succeed flight operation of airlines and to complete passengers' air travel procedures, varieties of facilities are provided by airports.

(1) Core facilities

Core facilities in this research refer to those facilities needed to make passengers' procedures and flight operation complete. Without the core facilities, airlines and passengers cannot process the flights. The core facilities those are especially important for operating one flight of low-cost carriers compose of airline offices, meeting rooms, check-in counters, connecting gates, and baggage claiming belts.

Low-cost carriers also need office spaces as other airlines do. Even low-cost carriers, have to realize on cost paid but enough working space is more important than the rental fees they have to pay for airports. Big airline office might have enough space for staff meeting but for some low-cost carriers of which office space was limited, the meeting room is required. A growing number of low-cost carriers' flights increases a number of airline staff working on ground operation. Charged or complementary meeting rooms for low-cost carriers should be provided by airports.

Check-in counters are crucial facilities for all airlines to operate flights. Different numbers, position, and condition of check-in counter affect the efficiency of flight operation of airlines. Numbers of check-in counters of low-cost carriers are currently less compared to those of full service carriers. Moreover, numbers of low-cost carriers' flights seemed to be higher than those of the full-service carriers. Numbers of check-in counter have to be relevant to numbers of operating flights of each airline. Position of check-in counter should be well and carefully assigned. Even zone of airlines' types were clearly set, low-cost carriers' counters might not be at the corner as always. Even some counters of the low-cost carriers were situated at the normal position but the condition was poor as well. Distinctly, there are no airlines which to use check-in counters without feed belts. Thus, providing all check-in counters with feed belts is necessary. Even some low-cost carriers did not include loaded baggage into the ticket; feed belts are needed for those

who buy for their baggage loading. Without feed belts at check-in, airlines' tasks must be increased by assigning more staff to dealing with loaded baggage at check-in.

Surprisingly, 'connecting gate' is required by most low-cost airlines operating domestic flights within Thailand. It's dissimilar to what the previous research that low-cost carriers do not require aerobridges to process their passengers. Most of low-cost carriers employ bigger aircraft size to carry a high number of passengers so remote bay parking might not be easy for the airlines. At regional airports of Thailand, most of low-cost carriers do not want to waste cost by having shuttle buses at airside. However, at the same time it's impossible to let all flights with big aircraft parked at the remote bays and let all passengers walk to and from the terminal. In terms of security rules, airlines are not allowed to do on that. If low-cost carriers' flights are assigned to use approached bay with connecting gates, it will make faster turnaround time, save costs, and be safer. Even the costs on connecting gates are a bit expensive for some mini flights compared to bus rental, it's more valuable to assure passengers' safety and ground time duration. Moreover, airports can gain benefits by affording more flights. In the eyes of passengers, they knew that they paid the same amount on airport tax so it will be fair to get the same class of services as the others.

Baggage claiming belts are concerned among low-cost carriers even not all of their passengers have loaded their baggage. Numbers of baggage belts must be enough for high frequent flights. It does not need to separate one belt for low-cost carriers or one belt for full-service carriers but baggage belts must be utilized.

(2) Basic facilities

Not only core facilities but basic facilities are needed. In this sense, basic facilities are about facilities that are basically needed for everyone's lives. Without this kind of facilities, air passengers can complete their flight but with inconvenience. Besides health services, washrooms, seats, eating facilities, and car parks are seemed to be crucial. Higher numbers of passengers need enough washrooms/toilets inside airports. Not only in the terminal but also inside the departure hall and arrival hall—secured areas—washrooms must be enough provided. An airport is the place where a number of people were gathered, basic facilities are

the must. Besides, enough seats must be allocated to all areas. Airports do not need to mainly put seats inside the departure hall since passengers need to sit while waiting for their baggage on arrival too. Passengers also have right to shops and sit inside the public area within the terminal too. Eating facilities must be realized for serving low-cost carrier passengers. The growth of low-cost carriers gives a chance to all socioeconomic classes of people to fly. Most of passengers who can buy LCC ticket cannot afford for food inside the airports. Thus, cafeterias are required over the high class restaurants. Most of low-cost flights do not provide meals on board except snacks of some airlines; most of passengers hope to find easier and cheaper meal at airport before takeoff. Another basic facility nowadays is car parks. Both day and overnight parking must be considered. Places for overnight parking and day parking should be clearly separated in terms of security and management. Numbers of parking lots should be well managed as well. Airports have to specify parking areas for airport staff or else passengers' parking spaces are occupied by the staff themselves. Above all, airport might have to design parking areas and suitable regulations to balance numbers of parked car and parking spaces.

(3) Supplement facilities

Besides post office, tour/hotel services, banks, or prayer rooms, Wi-Fi services and ground transports were highly required among LCC passengers. Supplement facilities do not affect the flight completion but affect customers' impression and convenience. All airports must provide even charged or free Wi-Fi services at airports. Once all research data collected, four airports of this study has launched free airport Wi-Fi at the end of 2013. In terms of ground transportation, LCC passengers need more choices of transport between airports and town. Even though an airport does not have direct responsibility to provide this service, an airport can coordinate with external agencies to provide public transport to the airports. The existing rental transports have to be maintained for another group of passengers who have different needs. However, the prices charged of rental services should be regarded. Most of LCC passengers still feel that the price is too high to achieve.

Main principles of providing those facilities should be based on convenience and quick. Facilities or equipment (e.g., clear signs, check-in

counters location, or even washrooms) should be able to create quicker process of passengers. Not only passengers but also the LCCs need quick process. Most of them are assigned with 30-35 ground time maximum for each flight so the way to quicker load and unload passengers and baggage the flight is necessary. As airlines and passengers are airports' customers, providing convenient services is airports' tasks. It seems to be unfair if passengers have to stand while waiting for their flights without any available seats. Providing feed belts at check-in counters can make LCC more convenient.

3) Service & staff

Since an airport business is related to service industry, customers hope to get best services from the service providers including airports. However the service substances cannot separately described without personnel or facilities.

(1) Information services

Flight information and airport terminal guide are mutual important information for passengers. Information at airports can be delivered in different ways. Providing information through information counters and through information sigs are what all airports have done. However, clear & updated information will help passengers, especially the foreigners.

(2) Treatment

Airports' customers need to be well treated from airport persons from the entrance. Friendly & helpful staff will impress customers and make the air trip smooth. Especially, low-cost carriers prefer airports to treat on them as airport did to other airlines. Good allocation on airport facilities (e.g., gates, check-in counters, or airline offices) can make airlines satisfied. Nice staff with positive attitudes on low-cost carrier was desired to work with LCC staff.

All airport services including staff services should be emphasized on equalization and utilization. Passengers of low-cost carriers must get the same service as those of the full service carriers get as long as all passengers have paid the same amount on airport tax. Some small thing might become a big issue, for example, if some LCC flights are assigned to use the gate where seats are not found in front of the gates, LCC staff and passengers might not fulfilled such that services.

In addition, all passengers must have equal right to use airports' services. Airports have to concern on disables once they arrive at the terminal gate. Airport might have to prepare proper treatments (e.g., wheelchairs, airport help persons, or passage) to facilitate all kind of customers. It would be good if the airport approach to disables and transfer them to their airlines at the check-in counters.

Exactly, all services provided by airports must be beneficial enough. Flight information screens are needed at public areas, departure hall, and arrival hall. Information counters must have helpful staff who can give basic information on routes, roads, hotels, or even tours. More importantly, the information service will be meaningless if modes of languages used by airports are not matched with the passengers'. Information signs will be highly beneficial when there are at least both Thai and English languages. Numbers of information staff cannot guarantee how well they can facilitate airport customers. Knowledge, communication, and foreign languages are required.

4) Infrastructure

Infrastructure covers physical evidence of the airport but airport terminal and airport environment are mainly focused.

(1) Terminal

Well-designed and well-equipped terminal is basically required. Better functioned terminal can better facilitate passengers' processes. Whenever it's easy to find things (e.g., information desks, toilets, or shops) hard to get lost, or fast to process, it reflects the efficiency of terminal design. The terminal of low-cost carriers does not need to have full supplementary facilities or services; just core and basic facilities are needed.

(2) Environment

Good condition of airport including airport terminal is more significant than the new airport. It's a huge task to have one new airport so maintenance is the regular task of airports to do. Being neat, tidy, and clean are more than enough for good airport terminal. Cleanliness might be critical issues for public places as airports. Clean seats, clean toilets, or clean passages cannot be overlooked.

From the low-cost carriers' perspectives, small or compact airports with sufficient capacity are desired. The bigger of airport size, the longer time the airlines need for ground time which is not suited for the LCC's concepts. Thus, if there will be the new airports for especially the low-cost carriers, compact & easy functions are the first priorities. Airports functions must be simplified such as departure passengers can process their check-in and go to the departure hall within 1 floor.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the dissertation titled 'Thailand Airport Operation Model for the Low-Cost Carriers' and reviews the results of the four research objectives, recommendations for airport authorities, recommendations for further research, research contributions, and limitations of the study.

The termination of this study is to answer the main research question *'How should Thailand airports model their operation for the low-cost carriers?'* so, three principal research questions were asked to meet the three objectives:

Question one: 'How operationally efficient are Thailand airports from low-cost carriers' perspectives?'

Question two: 'What are the levels of importance and efficiency of Thailand airports' operational attributes and operational procedures?'

Question three: 'What requirements do low-cost carrier passengers have for Thailand airports' operations?'

Before reviewing the summarized results, a concise review of Chapter 1, 2, and 3 is undertaken to demonstrate why these research questions were raised.

The growth of domestic, low-cost carriers has expanded globally, and the number of air passengers has grown continuously as well. Airports, as another key element of the air transportation system are directly affected by these growing circumstances. Airports need to shape their operational schemes to fit the new wave of air transport—the low-cost carrier (LCC). Since low-cost carriers and passengers

have specific characteristics such as short turnaround times, cost & price concerns, and quick & easy processes, airports need to consider how to properly serve these customers. Also, airports within Thailand are facing the situation of new flights and new routes launched by both Thai and foreign low-cost carriers.

From reviewed literature, airports need to continuously develop, regarding the changing environment. Efficient airport operation is significant, not only to fulfill customers' satisfaction but to maintain business. In relation to airport customers, operational schemes were realized for both arrival and departure procedures. Also, a number of operational attributes were revealed to evaluate specific points of operation. A number of related studies could be found on the relationship between low-cost carriers and their passengers, the relationship between airports and air passengers, airport operational themes, efficiency measurement on airports, and Thailand airport services. Since the integration of low-cost carriers and airport operations has emerged, there has not been any research on Thailand airports investigating the links between these issues. This research proposes a suitable model on airport operations, toward low-cost carriers.

In order to gain fruitful information, both quantitative and qualitative methods were employed in this study. Three groups of respondents were involved: 30 staff of the low-cost carriers (interviews), 7 airport executives (interviews), and 423 domestic LCC Thai and foreign passengers (questionnaire surveys and interviews). The groups of respondents were dispersed among four international airports: Phuket, Hat Yai, Chiang Mai, and Mae Fah Luang Chiang Rai. Content analysis was appointed for interview data whilst statistical analysis was used on the quantitative data from the questionnaire survey.

5.2 Summarized Results on the Research Objectives

As previously mentioned, there was one principal research question with multiple subordinate research questions for each research objective. Answers of all 11 subordinate research questions will be summarized under the relevant objective.

5.2.1 Summarized Results on Research Objective 1: To Study the Operational Efficiency of Thailand Airports from Low-Cost Carriers' Perspectives

To answer the principal research question *'How operationally efficient are Thailand airports from low-cost carriers' perspectives?',* three research subordinate questions were asked. Results for this research objective were mainly derived from low-cost carrier staff.

5.2.1.1 Research question 1: What operational areas are important for low-cost carriers?

Low-cost carrier staff viewed that safety & security were crucial factors. Safety measures and equipment must be well planned and provided. In addition, airport facilities were available. Airline offices, check-in counters, connecting gates, and claiming belts seemed to be major factors for airlines as well as ordinary facilities (e.g., toilets, information signs, or parking). There were other important issues low-cost carriers were concerned about: good service from airport staff, proper allocation on slot and parking bays, equal treatment to airlines, and capacity management on airport facilities.

5.2.1.2 Research question 2: What operational areas could Thailand airports efficiently perform?

Most airline representatives did not mention efficient areas since airports did not impress them on specific issues. The airports perform efficiently on overall standard services. Providing security check points with enough staff was accepted. Wide ranges of airport services cover retail outlets, souvenir shops, restaurants, food stores, health shops, rental services, tour services, exchanges/ATM, post offices, and even massage parlors. Another point of efficiency is how airports meet with airline representatives.

5.2.1.3 Research question 3: What operational areas should Thailand airports improve?

Some facilities were deemed to be insufficient in the eyes of low-cost carriers. Numbers of connecting gates, baggage claiming belts, check-in counters, or waiting seats were not well regarded. Likewise, car parking spaces, handicapped facilities, toilets, and internet services did not meet the needs of the highly diverse

passengers. Equal treatment from the airport was important for the airlines as well as all types of passengers (ordinary and disabled). High price fees and taxes should be decreased in order to offer more value to customers. Alternatively, the high prices of food and retail goods could be adjusted. The existing terminal should be renovated or reconfigured, as it was not designed for the growing number of flights and passengers, especially low-cost ones.

5.2.2 Summarized Results on Research Objective 2: To Investigate Levels of Importance and Efficiency in Operational Attributes and Operational Procedures of Thailand Airports

Similar to what had been explored in the first research objective, the 2nd research objective investigated the importance and efficiency of Thailand airports from the perspective of low-cost carriers, through questionnaire surveys and interviews. The principal research question of this objective was *'What are the levels of importance and efficiency of Thailand airports' operational attributes and operational procedures?'.* To clarify the results of this question, six subordinate research questions (4-9) were posed.

5.2.2.1 Research question 4: What are the importance levels for Thailand airports' operational attributes and operational procedures?

Of 33 operational attributes employed in this study, 12 of them (i.e., toilets, security screening, security staff, safety measures, check-in counters, information signs, internet services, baggage check-in, flight information screen, airport staff, health services, and parking facilities) were seen as strongly important attributes, over the others using frequency counts. Less important attributes shown from the analysis were post office, prayer rooms, retail shops, public telephones, tour/hotel services, car rental facilities, and eating facilities. In terms of procedures, all nine procedures were rated as important (5 out of a maximum of 6). Operational departure procedures were deemed as more important than arrival procedures.

5.2.2.2 Research question 5: What significant variables of passengers' socio-demographic profiles show different levels of importance for Thailand airports' operational attributes?

Eight socio-demographic variables were tested against importance levels. Four of them (i.e., gender, nationality, religion, and income showed significant differences from the average importance scores. Nationality and religion had largest effects on individual attributes' importance levels. Only occupation showed no significant differences among operational attributes or total importance scores.

5.2.2.3 Research question 6: What significant variables of passengers' travel experiences show different levels of importance for Thailand airports' operational attributes?

It was assumed that different travel experiences might affect importance ratings. Four variables of travel experience were considered: experience at sites, accompanying group, experience with air transport, and experience with airport. Relevant sub-variables were assigned as criteria for each variable. The results found that the number of visits to the province where an airport was situated showed significant results on total importance scores. First time visitors tended to rate lower importance to all attributes compared to those who had experience at the sites. On average, experience at sites showed significant results on more attributes over accompanying groups, experience of air transport, and experience of airports.

5.2.2.4 Research question 7: What are the efficiency levels for Thailand airports' operational attributes and operational procedures?

Likewise, the method used for research question 4 to 6 was duplicated to find the results from the opposite side of importance: efficiency. Overall operational attributes and overall operational procedures performed somewhat efficiently (4 out of a maximum of 6). Among 33 attributes, check-in counters, baggage check-in and baggage carts/trolleys demonstrated 'efficient' operation whereas the other 29 attributes except Wi-Fi services implied 'somewhat efficient' operation (4 out of a maximum of 6). Only Wi-Fi services showed 'strongly inefficient' levels with the lowest efficiency score ($\bar{x}$ = 2.49). In terms of efficiency levels on operational procedures, 'somewhat efficient' was assigned to all nine

procedures and to total efficiency score of procedures. Security screening to departure halls retrieved the highest mean scores whereas arrival hall processes had the lowest efficiency score among the procedures.

5.2.2.5 Research question 8: What significant variables of passengers' socio-demographic profiles show different levels of efficiency for Thailand airports' operational attributes?

Compared to importance scores, there were less socio-demographic variables affecting the overall efficiency mean scores (i.e., gender, and education). However, all 8 variables showed significant results on operational attributes in different ways. Gender and Nationality showed significant results on most attributes among others. Seat assignment, flight information screens, baggage check-in, and baggage claiming system were perceived as less efficient by Thai passengers than foreigners. Males tended to rate efficiency lower than females.

5.2.2.6 Research question 9: What significant variables of passengers' travel experiences show different levels of efficiency for Thailand airports' operational attributes?

There were not any variables on travel experiences that significantly affected total efficiency. Nevertheless, subordinate variables of each travel experience variable did show some significant results on some operational attributes. On average, experience with airports had significant results on most attributes over experiences on sites, accompanying group, and experience with air transport, respectively.

5.2.3 Summarized Results on Research Objective 3: To Analyze Low-Cost Carrier Passengers' Requirements toward Thailand Airports' Operations

To identify areas of requirements needed for LCC passengers, gap analysis was adopted to test significant differences between efficiency and importance. The principal research question: *'What requirements do low-cost carrier passengers have for Thailand airports' operations?'* was dispersed into two subordinate research questions (number 10 and 11) as follows.

5.2.3.1 Research question 10: What operational attributes of Thailand airports show significant gaps between efficiency levels and importance levels?

Except ‘post office’ all other 32 attributes showed significant gaps between efficiency and importance. Significant gaps shown were all negative. That is, efficiency mean scores were less than importance mean scores. Even though most the of attributes were rated at a positive level (4-6 levels), airport management cannot neglect the gap results. The ten largest gaps belonged to Wi-Fi services, washrooms/toilets, passenger steps/airfield buses, security staff, security screening, information signs, flight information screens, health services, safety measures, and parking facilities.

5.2.3.2 Research question 11: What operational procedures of Thailand airports show significant gaps between efficiency levels and importance levels?

All nine procedures and average total procedures demonstrated significant results with gap analysis. Similar to those significant attributes, all significant gaps depicted negative gap scores. That is to say those operational procedures had efficiency scores lower than importance scores. The results reflected holistic procedures were notable in the eyes of LCC passengers and airport management should be concerned.

5.2.4 Summarized Results on Research Objective 4: To Propose Thailand Airport Operation Model for the Low-Cost Carriers

‘How should Thailand airports model their operation for the low-cost carriers?’ is the principal research question for this final objective. The results of all previous research questions and the results of importance and efficiency depicted in the IPA quadrants were integrated and analyzed to pattern Thailand airport operations for the low-cost carrier. Arrival and departure procedures of domestic passengers were stretched in order to demonstrate a holistic view of operation mainly faced by customers. Moreover, some treatments (e.g., car parking, seats, or food stores) raised by LCC passengers and low-cost carriers were identified on some procedures. The analysis of research results also drove operational components of airport operation

including safety & security, facilities & equipment, services & staff, and infrastructure.

There were crucial elements and principles for each attributes. Safety measures, safety equipment, and persons were composed into safety & security with the focus on standardization and restriction. Core, basic, and supplemental facilities & equipment must consider a convenient and quick scheme whereas services & staff were required to be equal and helpful. In terms of infrastructure, especially the airport terminals, compact and simple functions were necessary among the low-cost carriers.

5.3 Recommendations

A researcher assures that this study contributes to Thailand airports and tourism system. In addition, recommendations for airport authorities and for further research are suggested.

5.3.1 Recommendations for Airport Authorities

Since there were significant results regarding airport operations from both questionnaire surveys and interviews, some specific recommendations for airport authorities are suggested.

5.3.1.1 Airport authorities might separate terminals or develop new ones specifically for low-cost carriers to meet their services and functions. (e.g., simple, flexible, reasonable, and functional).

5.3.1.2 Airport administrators should set regular meetings among airport operational staff, airline representatives, concessionaires, outsourced companies, and relevant agencies such as security companies. Moreover, the feedback and requirements from all parties should be seriously and sincerely considered. Airport management should also reflect upon what the airports have done regarding the issues that are raised in the meeting.

5.3.1.3 Airport authorities should put more effort on the safety & security issue. Training and quality control for security staff who were employed by

outsourced companies were urgently needed. In addition, airport authorities should find measures to screen all visitors entering the airport terminals.

5.3.1.4 Improving multi-language information signs will benefit both Thai and foreign passengers.

5.3.1.5 Airport administrators should equally allocate the usage of connecting gates to all airlines as much as possible.

5.3.1.6 As opposed to fine dining restaurants, canteens or cafeterias should be provided for LCC passengers who cannot afford high prices.

5.3.1.7 Airport authorities should allocate different parking areas. Overnight and day parking spaces should be clearly allocated.

5.3.1.8 All Thailand airports should provide Wi-Fi services to passengers according to their flights by providing free Wi-Fi with time limitation.

5.3.1.9 Airport authorities should promote cooperation with other transport authorities for better public ground transport to and from airports.

5.3.2 Recommendations for Further Research

5.3.2.1 Since this study mainly focused on service and operation of frontline service based on landside functions, further study should seek out relevant factors in the backstage affecting operational output.

5.3.2.2 Landside functions were the only focus of this research. So, a study on airport operation in association with airlines could be conducted in order to explore the efficiency of airports' airside operation.

5.3.2.3 Some significant issues were found in this research. For example, further research should thoroughly examine safety & security provided by airports. In addition, huge gaps were found on internet services, washrooms, flight information signs & screens, health services, parking facilities, and facilities for disabled.

5.3.2.4 This study collected data solely from low-cost carriers; a comparative study on both low-cost carriers and full service carriers would be fruitful for airport operation.

5.3.2.5 A study on airport operation with full participation from airport operational staff will reflect comprehensive perspectives and problems found in their operation.

5.3.2.6 Congestion management would be fruitful for further research since the number of airlines and passengers are dramatically growing.

5.4 Research Contribution

5.4.1 Contribution to Academia

5.4.1.1 Information from this research was retrieved from three parties (i.e., airport executives, low-cost carriers, and low-cost carrier passengers) to formulate a model.

5.4.1.2 In order to analyze service requirements of customers, both Importance-Performance Analysis and Gap analysis were used in parallel to generate more reliable and comprehensive results.

5.4.1.3 Dissimilar to the reviewed studies, this research found that low-cost carriers prefer using aerobridges or connecting gates to using steps or buses since they are more concerned with their passengers' convenience than incurring costs.

5.4.1.4 Most previous research did not apply 'Religion' as a demographic variable. In contrary, this research revealed that religion demonstrated significant results on importance levels and efficiency levels of airports' operational attributes.

5.4.2 Contribution to the Industry

5.4.2.1 These research results can be used as guidelines for airport authorities to improve facilities and services to effectively serve LCC carriers as well as their passengers.

5.4.2.2 This research allows airport authorities to realize the importance of working cooperatively with LCC carriers to serve their needs.

5.4.2.3 The results of this study revealed airport requirements from the perspectives of LCC passengers and LCC carriers in Thailand.

5.5 Limitations of the Study

5.5.1 The data collection period of this research was during November – December 2013 when many positions were being replaced at targeted airports. Thus, new executives in some airports refused to cooperate in giving interviews.

5.5.2 Since there were two versions of questionnaire (Thai & English) used in this research, some willing passengers (e.g., Chinese, French, or Russian) could not fill the questionnaire or even participate in the interviews.

5.5.3 In this research, data were collected only at the departure hall, from departing passengers who had experienced on both arrival and departure at the airport. As a result, respondents had to recall their memories of the arrival flights.

5.5.4 Research was conducted only on domestic flights within Thailand.

5.6 Conclusion

The operational efficiency retrieved from this research was based on the perspectives of low-cost carriers. Both airline staff and passengers of the low-cost carriers had raised some meaningful issues about airports, to be developed. Besides, notable elements of airport operation for the low-cost carriers were revealed. This researcher also carried out suggestions on both airport authorities and further research.

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APPENDICES

Appendix A

Questionnaire

Two versions of questionnaire (English and Thai) were used into the study as demonstrated in this part.

Appendix A.1: English Questionnaire

Appendix A.2: Thai Questionnaire

Appendix A.1: English Questionnaire

GS-TM

QUESTIONNAIRE

Date...../...../ 2013
Flight.....

"THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS"

Dear airport passenger,

This questionnaire survey is conducted by Miss Sukhuman KLAMSAENGSAI as a part of Ph.D dissertation in Integrated Tourism Management, Graduate School of Tourism Management, National Institute of Development Administration (NIDA). It aims at proposing *"THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS"*. The researcher would highly appreciate your participation in this research in completing this entire questionnaire and all responses **will be treated confidentially and purely used for research purposes.**

Please tick your airline of today!
☐Air Asia / ☐Nok Air / ☐Orient Thai Airlines

The questionnaire is divided into **FOUR parts** which include;

Part A: Travel experiences

Part B: Levels of importance and efficiency toward airports' operational attributes and airport operational procedures

Part C: Suggestions on airport operational attributes and procedures

Part D: Socio-demographic profile

Sincerely yours,

Sukhuman KLAMSAENGSAI *(Tel: +66 86 745 1525; E-mail: ksukhuma@gmail.com)*

Note: Please **write** down your answer or put '✔' into the ☐ which corresponds to your answer.

Part A: Travel Experiences

1. Your **main purpose** of the trip (If multiple purposes, please give **Ranks 1, 2, and 3**):

   .....1) Leisure / Holidays .....2) Education .....3) Visit friends / relatives

   .....4) Business .....5) Meeting / Seminar .....6) Others (Please specify).....

2. How many times you have visited this province/nearby per year?

   ☐1) This time is my first time (Please **move to no. 4**)

   ☐2) 1-2 Time(s) ☐3) 3-4 Times ☐4) 5-6 Times ☐5) 7-8 Times ☐6) 9-10 Times ☐7) More than 10

3. Normally, in the long distance trip **within** Thailand, what modes of transport did you **mostly use** to get to this province?

   [*Please rank* **with 1, 2, and 3** in front of the mode that **you ONLY have ever used**]

   .....1) By train .....2) By rental car .....3) By public bus / coach

   .....4) By Thai airways / Bangkok airways .....5) By low-cost airline (e.g. AirAsia, Nok Air, and Orient Thai Airlines)

   .....6) By personal car .....7) Others (Please specify).....

4. Accompanying persons and numbers including yourself:.....

   ☐1) Alone ⟶ by ✈ ☐(1) Own arrangement ☐(2) Package

   ☐2) Spouse / lover ⟶ by ✈ ☐(1) Own arrangement ☐(2) Package

   ☐3) Friends / Colleagues ✈.....persons by ✈ ☐(1) Own arrangement ☐(2) Package

   ☐4) Family ✈.....persons by ✈ ☐(1) Own arrangement ☐(2) Package

   ☐5) Others (Please specify)..... ✈.....persons by ✈ ☐(1) Own arrangement ☐(2) Package

5. **Reasons** for choosing low-cost airlines (e.g. Air Asia, Nok Air, and Orient Thai Airlines)? [*If multiple reasons, please* ***RANK***]

.....1) Price .....2) Flight schedule .....3) Airline routes

.....4) Airport location .....5) Flight frequencies .....6) Airline service

.....7) Booking system .....8) Others (Please specify).....

6. Please choose **ONE airline** that you **frequently** use *within* Thailand (Any routes are concerned):

☐1) AirAsia ☐2) Bangkok Airways ☐3) Happy Air ☐4) Kan Air ☐5) Nok Air

☐6) Orient Thai Airlines ☐7) Thai Airways ☐8) Others (Please specify).....

7. *Approximately*, you fly with domestic low-cost airlines within Thailand ✈ ..... flights per year.

8. In last 1 year, this is your ✈ .....time(s) arrive at and depart from THIS airport. (**Count:** arrival = 1, departure=1)

9. In last 1 year, this is your ✈.....time(s) flying by low-cost airlines to and from THIS airport. (**Count:** arrival = 1, departure=1)

10. On *departure*, your *average time* spent at THIS airport✈ .....hour(s).....minute(s)

11. On *arrival*, your *average time* spent at **THIS airport**✈ .....hour(s).....minute(s)

Part B: Levels of **importance** and **efficiency** toward airports' operational attributes and airport operational procedures

As a passenger flying with a Low-cost airline, please **RATE** the level of both **IMPORTANCE** and **EFFICIENCY** of attributes provided by **THIS airport** by marking ✓**OR** O on a number of each attribute.

6-LEVEL EVALUATION

6: strongly important	Didn't use	6: strongly efficient
5: important	No	5: efficient
4: somewhat important	experiences	4: somewhat efficient
3: somewhat unimportant		3: somewhat inefficient
2: unimportant	Please give	2: inefficient
1: strongly unimportant	0	1: strongly inefficient

Attributes	Levels of IMPORTANCE						No Experience	Levels of EFFICIENCY					
1. Accessibility to the airport	1	2	3	4	5	6	0	1	2	3	4	5	6
2. Parking facilities	1	2	3	4	5	6	0	1	2	3	4	5	6
3. Seat assignment & waiting area	1	2	3	4	5	6	0	1	2	3	4	5	6
4. Stairway / lifts / escalators within terminal	1	2	3	4	5	6	0	1	2	3	4	5	6
5. Information desk / information counters	1	2	3	4	5	6	0	1	2	3	4	5	6
6. Flight information screen	1	2	3	4	5	6	0	1	2	3	4	5	6
7. Broadcasting / announcement	1	2	3	4	5	6	0	1	2	3	4	5	6
8. Information signs	1	2	3	4	5	6	0	1	2	3	4	5	6
9. Airport staff	1	2	3	4	5	6	0	1	2	3	4	5	6
10. Security screening	1	2	3	4	5	6	0	1	2	3	4	5	6
11. Check-in counters	1	2	3	4	5	6	0	1	2	3	4	5	6
12. Baggage check-in	1	2	3	4	5	6	0	1	2	3	4	5	6
13. Retail shops	1	2	3	4	5	6	0	1	2	3	4	5	6
14. Restaurant / eating facilities	1	2	3	4	5	6	0	1	2	3	4	5	6

Attributes	Levels of IMPORTANCE							Levels of EFFICIENCY						
							No Experience							
15. Departure hall	1	2	3	4	5	6	0	1	2	3	4	5	6	
16. Aerobridges / connecting gate (terminal←→airplane)	1	2	3	4	5	6	0	1	2	3	4	5	6	
17. Passenger steps / airfield buses (terminal←→airplane)	1	2	3	4	5	6	0	1	2	3	4	5	6	
18. Arrival hall	1	2	3	4	5	6	0	1	2	3	4	5	6	
19. Baggage claiming system (arrival)	1	2	3	4	5	6	0	1	2	3	4	5	6	
20. Baggage belts (arrival)	1	2	3	4	5	6	0	1	2	3	4	5	6	
21. Baggage drop service	1	2	3	4	5	6	0	1	2	3	4	5	6	
22. Baggage carts / trolley	1	2	3	4	5	6	0	1	2	3	4	5	6	
23. Tour / hotel services	1	2	3	4	5	6	0	1	2	3	4	5	6	
24. Car rental facilities / taxi services	1	2	3	4	5	6	0	1	2	3	4	5	6	
25. Safety measures	1	2	3	4	5	6	0	1	2	3	4	5	6	
26. Security staff	1	2	3	4	5	6	0	1	2	3	4	5	6	
27. Health services	1	2	3	4	5	6	0	1	2	3	4	5	6	
28. Washrooms / toilets	1	2	3	4	5	6	0	1	2	3	4	5	6	
29. Prayer room	1	2	3	4	5	6	0	1	2	3	4	5	6	
30. Banks / exchange services	1	2	3	4	5	6	0	1	2	3	4	5	6	
31. Post office	1	2	3	4	5	6	0	1	2	3	4	5	6	
32. Public telephone	1	2	3	4	5	6	0	1	2	3	4	5	6	
33. Wi-Fi / Internet services	1	2	3	4	5	6	0	1	2	3	4	5	6	
Operational procedures *Services provided between.....* *point to point in THIS Airport?*	1: strongly unimportant	2: unimportant	3: somewhat unimportant	4: somewhat important	5: important	6: strongly important	No Experiences	1: strongly inefficient	2: inefficient	3: somewhat inefficient	4: somewhat efficient	5: efficient	6: strongly efficient	
(Arrival >>>>)														
34. (1) Airplane to arrival hall (Deplane)	1	2	3	4	5	6	0	1	2	3	4	5	6	
35. (2) Arrival hall to baggage claim	1	2	3	4	5	6	0	1	2	3	4	5	6	
36. (3) Baggage claim to public/retails services at terminal	1	2	3	4	5	6	0	1	2	3	4	5	6	
37. (4) Terminal gate to ground transport	1	2	3	4	5	6	0	1	2	3	4	5	6	
(Departure >>>>)														
38. (5) Ground transport to terminal	1	2	3	4	5	6	0	1	2	3	4	5	6	
39. (6) Terminal gate to check-in counters	1	2	3	4	5	6	0	1	2	3	4	5	6	
40. (7) Check-in counters to security screening	1	2	3	4	5	6	0	1	2	3	4	5	6	
41. (8) Security screening to departure hall	1	2	3	4	5	6	0	1	2	3	4	5	6	
42. (9) Departure hall to airplane (Enplane)	1	2	3	4	5	6	0	1	2	3	4	5	6	

Part C: Suggestions on airport operational attributes and procedures

Are there any further suggestions for **THIS Airport** to be improved for **passengers** who fly with *domestic low-cost airlines*?

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Part D: Socio-demographic profiles

1. Age: ✈ ..... years old
2. Gender: ☐1) Male ☐2) Female
3. Country of residence: ✈ .....
4. Marital status: ☐1) Single ☐2) Married ☐3) Widowed / Divorce
5. Religion:
   ☐1) Brahmanism/Hinduism ☐2) Buddhism ☐3) Christianity ☐4) Islamic
   ☐5) Sikh ☐6) Irreligious ☐7) Others (Please specify).....
6. Education:
   ☐1) Below Bachelor degree ☐2) Bachelor degree ☐3) Above Bachelor degree
   ☐4) Others (Please specify).....
7. Occupation: (Please choose ONLY one)
   ☐1) Government / Civil servant ☐2) Business owner ☐3) Private business employee
   ☐4) Housewife ☐5) Student ☐6) Temporary worker / Freelance
   ☐7) Retired ☐8) Unemployed ☐9) Others (Please specify).....
8. *Average monthly* income: ✈ ..... (*Please specify your "Currency"* ✈.....)

Thank you for your kind cooperation. Have a pleasant trip!

Appendix A.1: Thai Questionnaire

GS-TM

แบบสอบถาม

วันที่...../...../ 56
เที่ยวบิน.....

"รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ"

เรียน ท่านผู้โดยสาร

แบบสอบถามชุดนี้เป็นส่วนหนึ่งสำหรับการศึกษาดุษฎีนิพนธ์ของนางสาวสุขุมาล กล่ำแสงใส นักศึกษาหลักสูตรปรัชญาดุษฎีบัณฑิต สาขาการจัดการการท่องเที่ยวแบบบูรณาการ คณะการจัดการการท่องเที่ยว สถาบันบัณฑิตพัฒนบริหารศาสตร์ (นิด้า) โดยมีเป้าหมายที่จะนำเสนอ *"รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ"*

ผู้วิจัยหวังเป็นอย่างยิ่งว่าท่านจะให้ข้อมูลอย่างครบถ้วนและเป็นประโยชน์สำหรับการวิจัย ทั้งนี้ **ข้อมูลและความคิดเห็นของท่านจะถูกเก็บไว้เป็นความลับโดยผู้วิจัยและจะใช้เพื่อประโยชน์ทางการวิจัยเท่านั้น**

สายการบินของท่านวันนี้
- ☐ ไทยแอร์เอเชีย
- ☐ นกแอร์
- ☐ โอเรียนท์ไทยแอร์ไลน์

แบบสอบถาม **มี 4 ส่วน**ดังนี้

ก. ประสบการณ์การเดินทาง
ข. ระดับความสำคัญและระดับประสิทธิภาพการดำเนินงานของสนามบิน
ค. ข้อเสนอแนะอื่นๆ ต่อการดำเนินงานของสนามบิน
ง. ข้อมูลส่วนบุคคลของท่านผู้โดยสาร

ผู้วิจัยขอขอบพระคุณท่านเป็นอย่างสูงที่**สละเวลาอันมีค่าของท่านในการตอบแบบสอบถามชุดนี้** และขอให้ทุกการเดินทางของท่านมีความ**สวัสดิภาพ**

ด้วยความเคารพ

น.ส.สุขุมาล กล่ำแสงใส *(โทร 086 745 1525; อีเมล์ ksukhumal@gmail.com)*

คำชี้แจง: กรุณาให้ข้อมูลโดยเติมคำในช่องว่างและหรือทำเครื่องหมาย '✓' ลงใน ☐ ที่ตรงกับความเห็นของท่าน

ก. ประสบการณ์การเดินทาง

1. **วัตถุประสงค์<u>หลัก</u>**ของการเดินทางมาจังหวัดนี้ / พื้นที่ใกล้เคียง (หาก**มีมากกว่า 1 วัตถุประสงค์** โปรดให้**ตัวเลขเรียงลำดับ**):
   .....1) พักผ่อน / ท่องเที่ยว .....2) เรียน / การศึกษา .....3) เยี่ยมเพื่อน / เยี่ยมญาติ
   .....4) ติดต่อธุรกิจ .....5) ประชุม / อบรม / สัมมนา .....6) อื่นๆ (โปรดระบุ).....
2. ปกติแล้วท่านเดินทางมาเยือน**<u>จังหวัดนี้/พื้นที่นี้</u>** ประมาณกี่ครั้งต่อปี:
   ☐1) ครั้งนี้เป็นครั้งแรกในชีวิต (โปรดตอบข้อ 4 ได้เลย)
   ☐2) 1-2 ครั้ง ☐3) 3-4 ครั้ง ☐4) 5-6 ครั้ง ☐5) 7-8 ครั้ง ☐6) 9-10 ครั้ง ☐7) มากกว่า 10 ครั้ง
3. โดยปกติ ท่านเดินทางระยะไกล (เช่น จากกรุงเทพฯ) มาจังหวัดนี้หรือพื้นที่ใกล้เคียงโดยวิธีใดเป็นหลัก?
   [โปรดให้**ตัวเลขเรียงลำดับ** ในข้อที่ท่าน**<u>เคยใช้</u>**เดินทาง**<u>เท่านั้น</u>**]
   .....1) รถไฟ .....2) รถเช่า .....3) รถบัส / โค้ช สาธารณะ
   .....4) เครื่องบินของการบินไทย หรือ บางกอกแอร์เวย์ส .....5) เครื่องบินของสายการบินต้นทุนต่ำ (นกแอร์, แอร์เอเชีย, โอเรียนท์ไทย)
   .....6) รถยนต์ส่วนตัว .....7) อื่นๆ (โปรดระบุ).....
4. **ผู้ร่วมเดินทางและจำนวน**ผู้ร่วมเดินทางในครั้งนี้:
   ☐1) เดินทางคนเดียว----------->โดย ➔ ☐(1) จัดการเดินทางเอง ☐(2) ซื้อทัวร์
   ☐2) คนรัก / คู่สมรส----------->โดย ➔ ☐(1) จัดการเดินทางเอง ☐(2) ซื้อทัวร์
   ☐3) เพื่อน / เพื่อนร่วมงาน ➔ รวมท่านด้วย.....คน โดย ➔ ☐(1) จัดการเดินทางเอง ☐(2) ซื้อทัวร์
   ☐4) ครอบครัว ➔ รวมท่านด้วย.....คน โดย ➔ ☐(1) จัดการเดินทางเอง ☐(2) ซื้อทัวร์
   ☐5) อื่นๆ (โปรดระบุ)..... ➔ รวมท่านด้วย.....คน โดย ➔ ☐(1) จัดการเดินทางเอง ☐(2) ซื้อทัวร์

5. **เหตุผล** ที่ท่านเลือกเดินทางด้วย**สายการบินต้นทุนต่ำ**: [หากมี*มากกว่า 1 เหตุผล* โปรดให้**ตัวเลขเรียงลำดับ**ด้วย]

.....1) ราคา .....2) เวลาของเที่ยวบิน .....3) เส้นทางการบิน

.....4) ตำแหน่ง / ที่ตั้งของสนามบิน .....5) จำนวนเที่ยวบิน .....6) การบริการของสายการบิน

.....7) การจองตั๋วเดินทาง .....8) อื่นๆ (โปรดระบุ).....

6. โปรดเลือกสายการบินที่ท่านใช้บริการ **บ่อยที่สุด**ในการเดินทาง*ภายใน*ประเทศไทย (เส้นทางใดๆ ก็ได้) เพียง 1 **สายการบิน**

☐1) ไทยแอร์เอเชีย ☐2) บางกอกแอร์เวย์ส ☐3) แฮปปี้แอร์ ☐4) การ์แอร์ ☐5) นกแอร์

☐6) โอเรียนท์ไทยแอร์ไลน์ ☐7) ไทยแอร์เอเชีย ☐8) อื่นๆ (โปรดระบุ).....

7. โดยปกติท่านใช้บริการ **สายการบินต้นทุนต่ำ** สำหรับเที่ยวบิน*ภายใน*ประเทศ*ประมาณ*→..... เที่ยวต่อปี

8. ในรอบ 1 ปีที่ผ่านมา นี่เป็นครั้งที่ → .....ที่เดินทางเข้า-ออกจาก**สนามบินแห่งนี้** [นวกรวมกันได้ทั้งขาเข้าและขาออก]

9. ในรอบ 1 ปีที่ผ่านมา นี่เป็นครั้งที่ → .....ที่เดินทางเข้า-ออกจาก**สนามบินแห่งนี้** โดยใช้ **สายการบินต้นทุนต่ำ**

10. โดยทั่วไป ในเที่ยวบินขาออก (เช่น เที่ยวบินนี้) ท่านใช้เวลาอยู่ที่**สนามบินแห่งนี้***ประมาณ*→ .....ชั่วโมง.....นาที

11. โดยทั่วไป ในเที่ยวบินขาเข้า ท่านใช้เวลาอยู่ที่**สนามบินแห่งนี้***ประมาณ*→ .....ชั่วโมง.....นาที

ชะ ระดับความสำคัญและระดับประสิทธิภาพการดำเนินงานของสนามบิน

ในฐานะที่ท่านเป็นผู้โดยสารของสายการบินต้นทุนต่ำ ขอให้ท่านให้คำระดับคะแนน**ความสำคัญ**และ**ประสิทธิภาพ**ของสิ่งต่อไปนี้ ณ **สนามบินแห่งนี้** โดยทำเครื่องหมายถูก ✓ **หรือ** วงกลม ○ ตัวเลขที่ตรงกับความคิดเห็นของท่านมากที่สุด

ระดับค่าคะแนน →

ความสำคัญ	ไม่ได้ใช้ / ไม่พบเห็น	ประเมินประสิทธิภาพ
6: สำคัญมากที่สุด	ไม่ได้ใช้	6: เยี่ยม
5: สำคัญมาก	หรือ	5: ดีมาก
4: ค่อนข้างสำคัญ	ประเมิน	4: ค่อนข้างดี
3: ไม่ค่อยสำคัญ	ไม่ได้	3: ค่อนข้างแย่
2: ไม่สำคัญ	โปรดให้	2: แย่
1: ไม่สำคัญเลย	คะแนน	1: แย่มาก

รายการ	ท่าน ให้ความสำคัญ รายการเหล่านี้...แค่ไหน						ไม่ได้ใช้ ไม่พบเห็น	ประเมินประสิทธิภาพ สนามบินนี้...ดีเพียงใด					
1. การเดินทางเข้าถึงสนามบิน	1	2	3	4	5	6	0	1	2	3	4	5	6
2. ที่จอดรถ / ลานจอดรถ	1	2	3	4	5	6	0	1	2	3	4	5	6
3. เก้าอี้ / ที่นั่ง บริเวณพื้นที่สาธารณะ	1	2	3	4	5	6	0	1	2	3	4	5	6
4. บันได ลิฟต์ บันไดเลื่อนในอาคารผู้โดยสาร	1	2	3	4	5	6	0	1	2	3	4	5	6
5. เคาน์เตอร์ / จุดบริการข้อมูลของสนามบิน	1	2	3	4	5	6	0	1	2	3	4	5	6
6. จอแสดงข้อมูลเที่ยวบิน	1	2	3	4	5	6	0	1	2	3	4	5	6
7. การประกาศผ่านเครื่องขยายเสียง	1	2	3	4	5	6	0	1	2	3	4	5	6
8. ป้ายบอกทาง / ป้ายข้อมูล ภายในอาคารโดยสาร	1	2	3	4	5	6	0	1	2	3	4	5	6
9. พนักงาน / เจ้าหน้าที่ของ สนามบิน	1	2	3	4	5	6	0	1	2	3	4	5	6
10. การตรวจ / รักษาความปลอดภัย (security screening)	1	2	3	4	5	6	0	1	2	3	4	5	6
11. ระบบเช็คอินทั่วโดยสาร/ เคาน์เตอร์เช็คอิน	1	2	3	4	5	6	0	1	2	3	4	5	6
12. การเช็คอินกระเป๋า / การลำเลียงกระเป๋า	1	2	3	4	5	6	0	1	2	3	4	5	6
13. ร้านค้า / ร้านขายของภายในสนามบิน	1	2	3	4	5	6	0	1	2	3	4	5	6
14. ร้านอาหาร / ภัตตาคาร	1	2	3	4	5	6	0	1	2	3	4	5	6

รายการ	ท่าน ให้ความสำคัญรายการเหล่านี้...แค่ไหน							ไม่ได้ใช้ ไม่พบเห็น	ประเมินประสิทธิภาพสนามบินนี้...ดีเพียงใด					
15. ห้องผู้โดยสารขาออก (ห้องนี้)	1	2	3	4	5	6		0	1	2	3	4	5	6
16. ทางเดินแบบเชื่อมต่อกับเครื่องบิน (งวงช้าง)	1	2	3	4	5	6		0	1	2	3	4	5	6
17. บันได / รถบัส สำหรับขึ้น-ลงเครื่องบิน	1	2	3	4	5	6		0	1	2	3	4	5	6
18. ห้องผู้โดยสารขาเข้า (ห้องที่ท่านรับกระเป๋าโหลด)	1	2	3	4	5	6		0	1	2	3	4	5	6
19. ระบบลำเลียงกระเป๋าและรับสัมภาระ (ขาเข้า)	1	2	3	4	5	6		0	1	2	3	4	5	6
20. สายพานรับกระเป๋า (ขาเข้า)	1	2	3	4	5	6		0	1	2	3	4	5	6
21. บริการรับฝากกระเป๋า	1	2	3	4	5	6		0	1	2	3	4	5	6
22. รถเข็นกระเป๋า / สัมภาระ	1	2	3	4	5	6		0	1	2	3	4	5	6
23. เคาน์เตอร์บริการทัวร์ / ที่พัก	1	2	3	4	5	6		0	1	2	3	4	5	6
24. บริการรถเช่า / แท็กซี่	1	2	3	4	5	6		0	1	2	3	4	5	6
25. มาตรการรักษาความปลอดภัย	1	2	3	4	5	6		0	1	2	3	4	5	6
26. พนักงานรักษาความปลอดภัย	1	2	3	4	5	6		0	1	2	3	4	5	6
27. บริการสุขภาพ / ปฐมพยาบาล	1	2	3	4	5	6		0	1	2	3	4	5	6
28. ห้องสุขา	1	2	3	4	5	6		0	1	2	3	4	5	6
29. ห้องละหมาด / ห้องสวดมนต์	1	2	3	4	5	6		0	1	2	3	4	5	6
30. บริการธนาคาร / บริการแลกเปลี่ยนเงินตรา	1	2	3	4	5	6		0	1	2	3	4	5	6
31. บริการไปรษณีย์	1	2	3	4	5	6		0	1	2	3	4	5	6
32. บริการโทรศัพท์สาธารณะ	1	2	3	4	5	6		0	1	2	3	4	5	6
33. บริการอินเตอร์เน็ต / WI-FI	1	2	3	4	5	6		0	1	2	3	4	5	6
บริการ / การดำเนินงาน ระหว่าง **จุดหนึ่ง** ไปยัง **อีกจุดหนึ่ง** ของสนามบินแห่งนี้	1: ไม่สำคัญเลย	2: ไม่สำคัญ	3: ไม่ค่อยสำคัญ	4: ค่อนข้างสำคัญ	5: สำคัญมาก	6: สำคัญมากที่สุด		ไม่ได้ใช้บริการ ประเมินไม่ได้	1: ต่ำสุดๆ	2: แย่	3: ค่อนข้างแย่	4: ค่อนข้างดี	5: ดีมาก	6: ดีเยี่ยม
(ขาเข้า >>>>)														
34. (1) จาก<u>เครื่องบิน</u> ไปยัง <u>ห้องผู้โดยสารขาเข้า</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
35. (2) จาก<u>ห้องผู้โดยสารขาเข้า</u> ไปยัง <u>จุดรับกระเป๋า</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
36. (3) จาก<u>จุดรับกระเป๋า</u> ไปยัง <u>บริการสาธารณะ / ร้านค้าภายในอาคารผู้โดยสาร</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
37. (4) จาก<u>ประตูทางออก</u> ไปยัง <u>การเดินทางภาคพื้น</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
(ขาออก >>>>)														
38. (5) จาก<u>การเดินทางภาคพื้น</u> ไปยัง <u>อาคารผู้โดยสาร</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
39. (6) จาก<u>ประตูทางเข้า</u> ไปยัง <u>เคาน์เตอร์เช็คอิน</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
40. (7) จาก<u>เคาน์เตอร์เช็คอิน</u> ไปยัง <u>การสแกนวัตถุต้องห้าม</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
41. (8) จาก<u>การสแกนวัตถุต้องห้าม</u> ไปยัง <u>ห้องผู้โดยสารขาออก</u>	1	2	3	4	5	6		0	1	2	3	4	5	6
42. (9) จาก<u>ห้องผู้โดยสารขาออก</u> ไปยัง <u>เครื่องบิน</u> (ขึ้นเครื่อง)	1	2	3	4	5	6		0	1	2	3	4	5	6

ค: ข้อเสนอแนะอื่นๆ ต่อการดำเนินงานของสนามบิน

ท่านมีคำแนะนำใดบ้างสำหรับ**สนามบินนี้** ในการให้บริการผู้โดยสาร ที่เดินทางด้วยสายการบินต้นทุนต่ำ ?

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ง: ข้อมูลส่วนบุคคลของท่านผู้โดยสาร

1. อายุ: ✈ ..... ปี
2. เพศ: ☐1) ชาย ☐2) หญิง
3. ภูมิลำเนา / จังหวัดที่อยู่ : ✈ .....
4. สถานภาพ: ☐1) โสด ☐2) สมรส ☐3) หม้าย / หย่าร้าง
5. ศาสนา:
   ☐1) พราหมณ์ / ฮินดู ☐2) พุทธ ☐3) คริสต์ ☐4) อิสลาม
   ☐5) ซิกข์ ☐6) ไม่นับถือศาสนาใด ☐7) อื่นๆ (โปรดระบุ).....
6. การศึกษา:
   ☐1) ต่ำกว่าปริญญาตรี ☐2) ปริญญาตรี ☐3) สูงกว่าปริญญาตรี
   ☐4) อื่นๆ (โปรดระบุ).....
7. อาชีพหลัก: [โปรดเลือกเพียง 1 รายการ]
   ☐1) รับราชการ/รัฐวิสาหกิจ ☐2) เจ้าของธุรกิจ ☐3) พนักงาน / ลูกจ้างบริษัท
   ☐4) แม่บ้าน ☐5) นักเรียน / นักศึกษา ☐6) รับจ้างอิสระ
   ☐7) เกษียณ ☐8) ว่างงาน ☐9) อื่นๆ (โปรดระบุ).....
8. รายได้ **เฉลี่ย** ต่อเดือน โดย*ประมาณ* ✈ ..... บาท

ขอบพระคุณในความร่วมมือ ขอให้ท่านเดินทางโดยสวัสดิภาพ

Appendix B

Interview Form

Interview forms on three groups of respondents were illustrated in this section as follows.

Appendix B.1: Interview Form for LCC Passengers (English)

Appendix B.2: Interview Form for LCC Passengers (Thai)

Appendix B.3: Interview Form for LCC Staff (Thai)

Appendix B.4: Interview Form for Airport Executives (Thai)

Appendix B.1: Interview Form for LCC Passengers (English)

No. .....

Passenger Interview

"THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS"

GS-TM NIDA

Dear (Passengers),

My name is Sukhuman KLAMSAENGSAI. I am a Ph.D candidate of Doctor of Philosophy Program in Integrated Tourism Management at Graduate School of Tourism Management, National Institute of Development Administration (NIDA). I am now in the process of doing the dissertation which is a major part of my Ph.D study, which its title is **"Thailand Airport Operation Model for the Low-Cost Carriers"**. In order to achieve the objectives of the dissertation, the in-depth interview is designed as one of research tools to discover the operational efficiency of Thailand airports and passengers' service requirements.

Your information is strictly **used only for a research purpose.** Your personal information (this first page) will be separately kept in data bases maintained only by Miss Sukhuman Klamsaengsai and will be destroyed within two years. Your participation is completely voluntary, and you are consenting to participate by responding this interview. The researcher would like to ask your permission to write down and record your provided information and to take photos.

This in-depth interview consists of 2 basic parts of questions which are: A) Demographic profile and B) Operational efficiency & service requirements toward Thailand airports. *If there are any queries concerning this in-depth interview, please feel free to contact via the researcher's email at* ksukhuma@gmail.com or via mobile +66 867451525.

Sincerely Yours,

Sukhuman KLAMSAENGSAI

Date: ..... Time: ..... to ..... Venue: ..... Airline: .....

Name – Surname of Passenger: .....

The interviewee have given a permission to a researcher to record the interview: ☐ Yes ☐ No

The interviewee have given a permission to a researcher to take photos during the interview: ☐ Yes ☐ No

Passenger's signature (Please sign ONLY when you have checked all written notes): .....

Part A: Demographic profile

1. Gender: ☐1) Male ☐2) Female
2. Age: ✈ ..... Years.
3. Place of residence: ✈ .....
4. Religion: ✈ .....
5. Occupation: ✈ .....
6. Travel Experience: ✈ .....

.....

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No. .....

Part B: Operational efficiency & service requirements toward **Thailand airports** (Noted by a researcher)

1. As a passenger, what are important things for passengers that airport should realize?'

2. 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'

3. 'As a passenger, could you please raise areas or issues that the airport needs to improve?'

4. 'Apart from what we have discussed, what are your other suggestions for this airport?'

An interviewed passenger has signed at the separated first page

to prove the accuracy of information provided.

Appendix B.2: Interview Form for LCC Passengers (Thai)

บันทึกการสัมภาษณ์ลงที่.....

แบบสัมภาษณ์รายบุคคลสำหรับท่านผู้โดยสาร

"รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ"

"THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS"

GS-TM

สวัสดีค่ะ ท่านผู้โดยสาร

ดิฉัน นางสาวสุธุมาล กล่ำแสงใส นักศึกษาปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาการจัดการการท่องเที่ยวแบบบูรณาการ สถาบันบัณฑิตพัฒนบริหารศาสตร์ (นิด้า) กำลังศึกษาวิจัยสำหรับดุษฎีนิพนธ์หัวข้อ "รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ" และการสัมภาษณ์เชิงลึกรายบุคคลเพื่อเก็บข้อมูลเชิงคุณภาพก็เป็นส่วนสำคัญในการศึกษาถึง 1) ประสิทธิภาพการดำเนินงานของท่าอากาศยานไทย 2) บริการ/สิ่งที่ผู้โดยสารของสายการบินต้นทุนต่ำต้องการจากท่าอากาศยาน และ 3) บริการ/สิ่งที่สายการบินต้นทุนต่ำต้องการจากท่าอากาศยาน

ข้อมูลจากการสัมภาษณ์ครั้งนี้จะถูกนำไปใช้ในงานวิจัยนี้เท่านั้น ข้อมูลส่วนบุคคลของท่านผู้โดยสาร (เอกสารหน้าแรกนี้) จะถูกแยกและเก็บรักษาในฐานข้อมูลเป็นอย่างดีโดยนางสาวสุธุมาล กล่ำแสงใส และจะทำลายข้อมูลทั้งหมดภายใน 2 ปี การให้ข้อมูลของท่านในครั้งนี้ถือเป็นการให้สัมภาษณ์ด้วยความสมัครใจและอนุญาตที่จะให้ข้อมูล โดยผู้วิจัยจะทำการบันทึกเป็นลายลักษณ์อักษรและขออนุญาตท่านในการบันทึกเสียงและบันทึกภาพขณะทำการสัมภาษณ์

คำถามในการสัมภาษณ์ครั้งนี้แบ่งออกเป็น 2 ส่วนคือ 1) ข้อมูลส่วนบุคคลของท่านผู้โดยสาร และ 2) ประสิทธิภาพการดำเนินงานของสนามบินและความต้องการบริการของท่านผู้โดยสารจากสนามบินแห่งนี้ ทั้งนี้หากท่านมีข้อสงสัยประการใดเกี่ยวกับการสัมภาษณ์ สามารถติดต่อผู้วิจัยได้โดยตรงที่ โทร. 086 745 1525 หรืออีเมล์ ksukhuma@gmail.com ได้

ขอขอบพระคุณท่านเป็นอย่างสูงที่ให้ความร่วมมือ

น.ส.สุธุมาล กล่ำแสงใส

วันที่: ..... เวลา: ..... ถึง..... สถานที่: ..... สายการบิน: .....

ชื่อ-สกุล ผู้ให้สัมภาษณ์:.....

ผู้ให้สัมภาษณ์อนุญาตให้ผู้วิจัยบันทึกเสียงขณะทำการสัมภาษณ์: ☐ อนุญาต ☐ ไม่อนุญาต

ผู้ให้สัมภาษณ์อนุญาตให้ผู้วิจัยบันทึกภาพขณะทำการสัมภาษณ์: ☐ อนุญาต ☐ ไม่อนุญาต

ลงชื่อผู้ให้สัมภาษณ์ (โปรดลงชื่อหลังจากอ่านและยืนยันการจดบันทึกแล้วเท่านั้น): .....

ส่วนที่ 1 ข้อมูลส่วนบุคคลของผู้ให้สัมภาษณ์

1. เพศ: ☐1) ชาย ☐2) หญิง
2. อายุ: → ..... ปี
3. ภูมิลำเนา: → .....
4. ศาสนา: → .....
5. อาชีพหลัก: → .....
6. ประสบการณ์เดินทาง: → .....

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บันทึกการสัมภาษณ์ลำดับที่.....

<u>ส่วนที่ 2 การดำเนินงานของท่าอากาศยานแห่งนี้</u> (จดบันทึกโดยผู้วิจัย)

1. ในการมาใช้บริการที่สนามบินแห่งนี้ ท่านให้ความสำคัญกับเรื่องใดหรือสิ่งใดมากที่สุด เพราะเหตุผลใด

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2. ในฐานะผู้โดยสารท่านมีความประทับใจอะไรบ้างจากสนามบินแห่งนี้หรือสิ่งที่ท่านคิดว่าสนามบินนี้ทำได้ดี

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3. ท่านคิดว่าท่านไม่ประทับใจอะไรบ้างในสนามบินนี้และคิดว่าควรมีการพัฒนาหรือปรับปรุงโดยด่วน

4. ข้อเสนอแนะอื่นๆ

ผู้ให้สัมภาษณ์ได้ให้ข้อมูลส่วนบุคคลและลงลายมือชื่อไว้ในหน้าแรกของแบบสัมภาษณ์
เพื่อยืนยันว่าเป็นผู้ให้ข้อมูลข้างต้นจริง

Appendix B.3: Interview Form for LCC Staff (Thai)

บันทึกการสัมภาษณ์ลงที่.....

แบบสัมภาษณ์รายบุคคลสำหรับพนักงานสายการบิน

"รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ"

"THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS"

GS-TM

สวัสดีค่ะ ท่านผู้ให้สัมภาษณ์

ดิฉัน นางสาวสุธุมาล กล่ำแสงไส นักศึกษาปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาการจัดการการท่องเที่ยวแบบบูรณาการ สถาบันบัณฑิตพัฒนบริหารศาสตร์ (นิด้า) กำลังศึกษาวิจัยสำหรับดุษฎีนิพนธ์หัวข้อ "รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ" และการสัมภาษณ์เชิงลึกรายบุคคลเพื่อเก็บข้อมูลเชิงคุณภาพก็เป็นส่วนสำคัญในการศึกษาถึง 1) ประสิทธิภาพการดำเนินงานของท่าอากาศยานไทย 2) บริการ/สิ่งที่ผู้โดยสารของสายการบินต้นทุนต่ำต้องการจากท่าอากาศยาน และ 3) บริการ/สิ่งที่สายการบินต้นทุนต่ำต้องการจากท่าอากาศยาน

ข้อมูลจากการสัมภาษณ์ครั้งนี้จะถูกนำไปใช้ในงานวิจัยนี้เท่านั้น ข้อมูลส่วนบุคคลของท่านผู้ให้สัมภาษณ์ (เอกสารหน้าแรกนี้) จะถูกเก็บรักษาในฐานข้อมูลเป็นอย่างดีโดยนางสาวสุธุมาล กล่ำแสงไส และจะทำลายข้อมูลทั้งหมดภายใน 2 ปี การให้ข้อมูลของท่านในครั้งนี้ถือเป็นการให้สัมภาษณ์ด้วยความสมัครใจและอนุญาตที่จะให้ข้อมูล โดยผู้วิจัยจะทำการบันทึกเป็นลายลักษณ์อักษรและขออนุญาตท่านในการบันทึกเสียงและบันทึกภาพขณะทำการสัมภาษณ์

คำถามในการสัมภาษณ์ครั้งนี้แบ่งออกเป็น 2 ส่วนคือ 1) ข้อมูลส่วนบุคคลของผู้ให้สัมภาษณ์ 2) การดำเนินงานของท่าอากาศยานแห่งนี้ ทั้งนี้หากท่านมีข้อสงสัยประการใดเกี่ยวกับการสัมภาษณ์ สามารถติดต่อผู้วิจัยได้โดยตรงที่ โทร. 086 745 1525 หรืออีเมล์ ksukhuma@gmail.com ได้

ขอขอบพระคุณท่านเป็นอย่างสูงที่ให้ความร่วมมือ

น.ส.สุธุมาล กล่ำแสงไส

วันที่: ..... เวลา: ..... ถึง..... สถานที่: ..... สายการบิน: .....

ผู้ให้สัมภาษณ์:..... ตำแหน่งงาน: .....

ผู้ให้สัมภาษณ์อนุญาตให้ผู้วิจัยบันทึกเสียงขณะทำการสัมภาษณ์: ☐ อนุญาต ☐ ไม่อนุญาต

ผู้ให้สัมภาษณ์อนุญาตให้ผู้วิจัยบันทึกภาพขณะทำการสัมภาษณ์: ☐ อนุญาต ☐ ไม่อนุญาต

ลงชื่อผู้ให้สัมภาษณ์ (โปรดลงชื่อหลังจากอ่านและยืนยันการจดบันทึกแล้วเท่านั้น): .....

ส่วนที่ 1 ข้อมูลส่วนบุคคลของผู้ให้สัมภาษณ์

1. เพศ: ☐1) ชาย ☐2) หญิง
2. อายุ: ✈.....ปี การศึกษา: ✈.....
3. ประสบการณ์การทำงาน: ✈ .....
4. ภาระงานที่รับผิดชอบ: ✈.....

.....

.....

.....

บันทึกการสัมภาษณ์ลำดับที่.....

<u>ส่วนที่ 2 การดำเนินงานของท่าอากาศยานแห่งนี้</u> (จดบันทึกโดยผู้วิจัย)

1. ท่านคิดว่าท่าอากาศยานควรให้ความสำคัญกับเรื่องใดมากที่สุดในการให้บริการสายการบินและผู้โดยสาร
   (What are important things about carriers and passengers that airports should realize?)

2. ท่านคิดว่ามีงานส่วนใดบ้างของท่าอากาศยานที่มีการจัดการหรือดำเนินการที่ดีและเป็นประโยชน์กับสายการบินของท่านและผู้โดยสารของสายการบินท่าน (ตั้งแต่เครื่องบินลงจอด จนกระทั่งบินออกจากท่าอากาศยาน)
   (Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?)

3. ท่านอยากให้ท่าอากาศยานแห่งนี้พัฒนาหรือปรับปรุงในเรื่องใดบ้างเพื่อที่จะทำให้การดำเนินงานของสายการบินของท่านเป็นไปด้วยความราบรื่น และเพื่อตอบสนองกับความเติบโตของจำนวนผู้โดยสารภายในประเทศที่เดินทางด้วยสายการบินต้นทุนต่ำ

(Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?)

4. ข้อเสนอแนะอื่นๆ

(Apart from what we have discussed, what are your other suggestions for this airport?)

ผู้ให้สัมภาษณ์ได้ให้ข้อมูลส่วนบุคคลและลงลายมือชื่อไว้ในหน้าแรกของแบบสัมภาษณ์
เพื่อยืนยันว่าเป็นผู้ให้ข้อมูลช้างต้นจริง

(An interviewee has signed at the separated first page to prove the accuracy of information provided.)

Appendix B.4: Interview Form for Airport Executives (Thai)

บันทึกการสัมภาษณ์ลงที่.....

แบบสัมภาษณ์รายบุคคล สำหรับผู้บริหารท่าอากาศยาน

"รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ"

"THAILAND AIRPORT OPERATION MODEL FOR THE LOW-COST CARRIERS"

GS-TM

สวัสดีค่ะ ท่านผู้ให้สัมภาษณ์

ดิฉัน นางสาวสุชุมาล กล่ำแสงใส นักศึกษาปริญญาเอก หลักสูตรปรัชญาดุษฎีบัณฑิต สาขาการจัดการการท่องเที่ยวแบบบูรณาการ สถาบันบัณฑิตพัฒนบริหารศาสตร์ (นิด้า) กำลังศึกษาวิจัยสำหรับดุษฎีนิพนธ์หัวข้อ "รูปแบบการดำเนินงานของท่าอากาศยานไทยสำหรับสายการบินต้นทุนต่ำ" และการสัมภาษณ์รายบุคคลเพื่อเก็บข้อมูลเชิงคุณภาพก็เป็นส่วนสำคัญในการศึกษาถึง 1) ประสิทธิภาพการดำเนินงานของท่าอากาศยานไทย 2) บริการ/สิ่งที่ผู้โดยสารของสายการบินต้นทุนต่ำต้องการจากท่าอากาศยาน และ 3) บริการ/สิ่งที่สายการบินต้นทุนต่ำต้องการจากท่าอากาศยาน

ข้อมูลจากการสัมภาษณ์ครั้งนี้จะถูกนำไปใช้ในงานวิจัยนี้เท่านั้น ข้อมูลส่วนบุคคลของท่านผู้ให้สัมภาษณ์ (แบบสัมภาษณ์หน้าแรกนี้) จะถูกเก็บรักษาในฐานข้อมูลเป็นอย่างดีโดยนางสาวสุชุมาล กล่ำแสงใส และจะทำลายข้อมูลทั้งหมดภายใน 2 ปี การให้ข้อมูลของท่านในครั้งนี้ถือเป็นการให้สัมภาษณ์ด้วยความสมัครใจและอนุญาตที่จะให้ข้อมูล โดยผู้วิจัยจะทำการบันทึกเป็นลายลักษณ์อักษรและขออนุญาตท่านในการบันทึกเสียงและบันทึกภาพขณะทำการสัมภาษณ์

คำถามในการสัมภาษณ์ครั้งนี้แบ่งออกเป็น 2 ส่วนคือ 1) ข้อมูลส่วนบุคคลของผู้ให้สัมภาษณ์ 2) การดำเนินงานของท่าอากาศยานแห่งนี้ ทั้งนี้หากท่านมีข้อสงสัยประการใดเกี่ยวกับการสัมภาษณ์ สามารถติดต่อผู้วิจัยได้โดยตรงที่ โทร. 086 745 1525 หรืออีเมล์ ksukhumo@gmail.com ได้

ขอขอบพระคุณท่านเป็นอย่างสูงที่ให้ความร่วมมือ

น.ส.สุชุมาล กล่ำแสงใส

วันที่: ..... เวลา: ..... ถึง..... สถานที่: .....

ผู้ให้สัมภาษณ์:..... ตำแหน่งงาน: .....

ผู้ให้สัมภาษณ์อนุญาตให้ผู้วิจัยบันทึกเสียงขณะทำการสัมภาษณ์: ☐ อนุญาต ☐ ไม่อนุญาต

ผู้ให้สัมภาษณ์อนุญาตให้ผู้วิจัยบันทึกภาพขณะทำการสัมภาษณ์: ☐ อนุญาต ☐ ไม่อนุญาต

ลงชื่อผู้ให้สัมภาษณ์ (โปรดลงชื่อหลังจากอ่านและยืนยันการจดบันทึกแล้วเท่านั้น): .....

ส่วนที่ 1 ข้อมูลส่วนบุคคลของผู้ให้สัมภาษณ์

1. เพศ: ☐1) ชาย ☐2) หญิง
2. อายุ: ✈.....ปี การศึกษา: ✈.....
3. ประสบการณ์การทำงาน: ✈.....
4. ภาระงานที่รับผิดชอบ: ✈.....

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บันทึกการสัมภาษณ์เลขที่.....

<u>ส่วนที่ 2 การดำเนินงานของท่าอากาศยานแห่งนี้</u> (จดบันทึกโดยผู้วิจัย)

1. ในการให้บริการสายการบินและผู้โดยสาร ท่านหรือท่าอากาศยานให้ความสำคัญเรื่องใดมากที่สุด
   (What are important things about the carriers and passengers that this airport concern about?)

2. ท่านคิดว่าท่าอากาศยานแห่งนี้มีประสิทธิภาพ หรือประสบความสำเร็จในการดำเนินงานในเรื่องใดบ้าง
   (Could you please tell me anything that this airport could efficiently perform?)

3. ท่านคิดว่าท่าอากาศยานแห่งนี้ควรพัฒนาหรือปรับปรุงสิ่งใดบ้างเพื่อรองรับการเติบโตของสายการบินต้นทุนต่ำ และตอบสนองต่อความต้องการของผู้โดยสารของสายการบินต้นทุนต่ำ โดยเฉพาะเส้นทางภายในประเทศ
(Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?)

4. ข้อเสนอแนะอื่นๆ
(Apart from what we have discussed, what are your other ideas on airport operation?)

ผู้ให้สัมภาษณ์ได้ให้ข้อมูลส่วนบุคคลและลงลายมือชื่อไว้ในหน้าแรกของแบบสัมภาษณ์
เพื่อยืนยันว่าเป็นผู้ให้ข้อมูลข้างต้นจริง
(An interviewee has signed at the separated first page to prove the accuracy of information provided.)

Appendix C

Interview Transcription

Interview transcripts on three groups of respondents were illustrated in this section.

Appendix C.1: Transcriptions on LCC Passengers

Appendix C.2: Transcriptions on LCC Staff

Appendix C.3: Transcriptions on Airport Executives

Appendix C.1: Transcriptions on LCC Passengers

Table C.1 Interview Transcription of Low-Cost Carrier Passengers

Respondents	Transcripts Question 2. 'As a passenger, what are important things for passengers that airport should realize?
P1	Enough seats for both passengers and their relatives in the public area are quite important. It looks much crowed inside the terminal. Another thing is about 'safety' concern. If a criminal with bad purposes is easily allowed into this airport, it's very dangerous for sure.
P2	For using airports, I concern on information sign within airports. Sometimes, I come to the airport by myself I prefer the clear signs. The most important thing is about safety! I am sure that everyone thinks like me. Especially here in Phuket international airport, there are many and diverse users come into the airport even domestic or international flights. The airport should prepare safety measure to make sure that everyone in this airport will be safe.
P3	For me, the right and quickness of passenger process is very important. I am ok with the fair service here even today I fly with AirAsia not Thai airways. I don't want to see long queues in front of check-in counters. More, I hope the airport and airline can guarantee my suitcase condition when I load mine.
P4	All basic services at the airport are important. It includes airport facilities (such as parking area, trolley, information, check-in, toilets, restaurants, seats, staff, and safety) and airport equipment. All should be well prepared and managed for all passengers in processing their flights.
P5	For me? Toilets and safety are significant. Clean and enough toilets is necessary. For safety, news made me afraid of travelling to southern part of Thailand including here in Phuket, especially at the airport. Airport should provide the highest measure in safety, security, and sanitary. The airport management should aware of these issues.
P6	When I come to the airport, I want to see the airport clean and tidy. Flying within Thailand or other country, I expect for good signs and English speaking staff. If ones can speak Spanish, it's awesome!
P7	For loading baggage, baggage condition should be in good condition. I have had experienced with Thai AirAsia once and staff damaged my suitcase, I think.
P8	I think for airport users, being fast, being convenient, and being secured are three important things.
P9	Easily, the security and safety is the most important part for me in every airport.
P10	I think….being fast, convenience, and being safe are important when I come to airport. I do want clean toilets.
P11	For me, the security is the most important issue. If airport can maintain the high level of security, that's it.
P12	Security is the most and the must.
P13	Safety is the most important issue for me. I don't mean only inside the terminal but even parking area should be safe. If the airport provides free or charged parking place but the airport does not aware on how the cars will be secured, it's nonsense. The security staff should be equally strict to all comers without special right.
P14	Check-in service is very important for me as a passenger. Airport should well manage the check-in system to be highly efficient. Moreover, the friendly and helpful staff is very important too. Airport is in the service industry. Not only good machine needed but nice people are also required.
P15	The most important thing in the airport for me as a foreign passenger is that 'customer services'. Information counter should be ready for helps all the time. Persons working for customer service should be helpful and good communicated. Another important thing is information on arrival. Once I arrived at this airport It's not easy for me to find transport, places to go. For departure, I believe that check-in process is very important. Customer service, information and signs and check-in are important.
P16	The most important thing is the cleanliness of the airport. I mean in all area of the airport since the entrance…outside and inside the terminal. Another thing is 'safety' since everyone here needs to be secure. I believe that airport should have good measures on safety. Another point that should not be ignored is about the process of passengers. The process must be quick and easy at the entrance door.

Table C.1 (Continued)

Respondents	Transcripts Question 2. 'As a passenger, what are important things for passengers that airport should realize?
P17	Safety is very important for every airports. I want to feel safe or else I will worry during my trip. I don't want to hear news about bomb in airport. Airport must be strict on carrying weapons with all persons.
P18	The convenience, the rapidity, and the cleanliness are important for me. Airports are not only the place for passengers to enplane or deplane but airports should be convenient for passengers & relatives while waiting for airplane or doing something else inside the airport. Passengers should be happy here. Nobody wants slow service on check-in process, security screening, or baggage claim. Airports have to be professional. And the cleanliness is very important to every area of the airports or else it looks untidy and might be dangerous in some cases.
P19	The airport should be reachable otherwise it's not useful. It' should be easy for passengers to access. Another thing is about information board especially for foreign travellers. The information should be clearly shown and airports have to make sure that there is enough board in proper positions. Not only the information board but also information counters with English speaking staff is the must of airport. Besides what I have said, check-in counters, airport cleanliness, safety, sanitary, and safe environment are mutual significant.
P20	'Toilet' is important for public places including airport. Numbers of toilet rooms and the cleanliness are both important. Parking area is also necessary for all airports. I think 'Food' or 'restaurants' are important because there is no food service in-flight. Last, safety is another most significant issue.
P21	I think 'information' including the contents of information and the information signs are important to me. I found many information signs in Thailand showed in Thai only which is difficult for foreigners to understand. In airport information signs using symbols or pictures will be easier to understand.
P22	Information signs are important for all passengers and visitors. Clear signs ease passengers to find the way by their own without asking anyone. Besides clear signs, English speaking staff is basically required. If they can speak in other foreign language it would be fine. Currently, WI-FI is important for everyone's daily lives. Free or charged WIFI is significant. Not only inside the terminal but outside the terminal should be concerned. For getting to and from airport, ground transportation choices are important.
P23	Security system is the must for airport. All services are also important but security and safety is the most important for airports. The second important point is about the airport services bot airport staff and airline staff. Last, facilities for disable or aging passengers and visitors. Airports have to equally serve all people.
P24	Information signs are important. The signs must be clearly defied and placed at the right position. Relating to information signs, terminal map is important too. The reception counter should be located at the noticeable place. Security and toilets are both important for airport passengers.
P25	A comfort ability of the airport is important since the airport is a service business. Passengers as airport customers need to be taken care well by airport. Another important thing is about good food. The place like airport must concern on food service for a lot of people who visit the airport. Another thing is about Wi-Fi service
P26	Enough seats should be available for the passengers. Electric plugs are important for modern passengers. Most of passengers come to airport with smartphones, tablets, or electronics devices.
P27	Passenger convenience is the most important to passengers. The convenience at check-in, baggage check-in, and security screening are important. The main functions of airport services to passengers are about these three things. Another concern is about security. All areas in the airport have to be secured and safe. Besides, modern decoration, airport identity, toilets, staff, and the cleanliness are mutual necessary.

Table C.1 (Continued)

Respondents	Transcripts Question 3. 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'
P1	I always fly to and from this airport. I don't think this airport can impress me even it is international airport.
P2	Um..I have visited this airport for several times. There are many flight options for me both TG and low-cost carriers. Also, flight frequencies are very good.
P3	In general, I'm quite ok with this airport because this airport is quite big compared to airports in many provinces. This airport has everything I want as a passenger. There are good shops, food outlets, banks, and so on. I love another point of this airport about taking passengers to and from airplane by the connecting gate. That is very convenient for me and all passengers dislike in some other provinces.
P4	It's good that the arrival and the departure hall here have been separated to different floor. I do love the security screening at the front gate of the terminal because it makes me and everyone here feel safe.
P5	I love Thai people and actually the staff here is very nice. They always smile at me even they work for the security tasks. It's easy to reach check-in counters here. Once I get in the terminal, check-in counters are easily found.
P6	There are many shops and fast food that are easy to me. The staff is very helpful even they are not fluent in English speaking.
P7	Since this airport is not too big, I accept all services in general. I met friendly and service minded staff here. I think that this airport is quite clean especially for the restrooms.
P8	Everything looks ok since it is the small airport here. The airport is not complicated. Staff is nice and helpful. All staff pays high attention to safety measure which is good. Another good point of this airport is that the airport staff allows passengers to temporarily park their private car at the curbside. That means that they understand how passengers feel.
P9	It seems to be ok in total. In total, it's convenient. The strength here is about security check. I quite like the strict security checking at this airport. There are airport staffs or soldiers checked all passing cars in front of the front gate. I mean we are checked before we reach another checked point at the front gate. I also impress the information signs within the terminal. Big and clear alphabets with Thai and English on the sign are very useful.
P10	I really impress with the security check at the military force, it assures my safety. This airport is very compact so check-in process is not complicated. I like this kind of airport otherwise I have to wait for the long queue.
P11	In general, it is ok since Hat Yai airport is a small airport. I have ever had good experience with the honest security staff so that I believe that staff here is very nice and sincere. That was good for me and everyone. The security system of Hat Yai airport is very strict. This system is very good for all users at this airport. Toilets I have used here are acceptable. There also is a water tap in each toilet room.
P12	Since Hat Yai airport is a small airport so it's fast and easy to check-in. I don't have to wait long queue from the curbside to a check-in counter. I love the security system here since passengers, their belongings, and their relatives have to be scanned. More importantly, the security check begins from the front gate which is a really good point. The variety of goods and shops is over my expectation since here is the local airport. Definitely, people are very nice and friendly.
P13	I love the small airport like Hat Yai. This kind of airport makes me fast and convenient dislike the one in Chiang Mai. It's easy for me to go for shopping, toilets, or any. It's also good to have one entrance and one exit at the terminal even both are far each other.
P14	The overall is OK. The passenger process is quick and smooth. I love it. It's because of the small size of this airport.
P15	This Chiang Mai airport is not too big so all process run fast and simple. It's easy to find check-in counters and just go upstairs to departure lounge. The security check at the front gate is very good. I seldom found checking system like this in other countries.
P16	The overall is ok. I don't find any problems here. Whenever I fly to Chiang Mai airport, I don't waste the time on the shuttle bus like other large airport. I feel comfortable.

Table C.1 (Continued)

Respondents	Transcripts Question 3. 'As a passenger, could you please tell me anything that impresses you about this airport or anything that you think that an airport could efficiently perform?'
P17	In general, it's accepted since the scan or x-ray screening. It makes me feel safe. I am happy. From the past until now, this airport perform well in safety concerns. Chiang Mai airport is not big but still bigger than other airports in some provinces. Most of my flights are allocated to connecting gates which is convenient for me. At some other small airports, I have to walk from airplane to gate. In Chiang Mai, even a connecting gate is quite far, but I don't feel far. Walking inside the terminal is ok for me. Taxi service here is trustworthiness since I had to pay at the informed price with no more illegal charges.
P18	It's ok in general. It's quite convenient due to a short distance between city and airport, a well- equipped terminal, and it's the international airport. Another point here is the rapidity of all processes. The airport functions are not complicated so it's fast and easy. When I don't have baggage to be loaded, it's faster and I love it.
P19	Chiang Rai airport is quite small from my eyes so it's simple in functions and accessibility. It's very easy to access this airport by a taxi. I found friendly and helpful staff here. I do impress in safety restriction. I feel safe.
P20	Due to the small size of this airport, it's convenient for me. I don't need to take time for walking. Seat condition is good and enough. I am not sure it's still enough if there are higher numbers of passengers at that time. Trolley service is good for everyone.
P21	Overall is all right. The airport is fitting so it's easy to move, easy to find shops, easy to find places and services. Exactly, it's difficult to get lost. I quite impress with a double security check. It's auspicious for passengers. It make me feel comfortable walking inside this airport.
P22	Nice and friendly staff can remind me how the nice people are! I mean staff in general and the post office staff, especially. Food and shops in this small terminal is ok. I can afford it. I love the small airport since it's functions are not complicated. It's very nice.
P23	This airport provides ramp for disable persons. This is a good point that I impress. I also found friendly staffs that pay attention to passengers' need. They care of passengers. Another thing is about the name 'Mae Fah Luang' which make me feel good. The name reminds the royal grace of Somdet ya (Somdet Phra Srinagarindra Boromarajajonani).
P24	The overall service is ok. It's convenient since the airport is small. It's not difficult to find service points inside this airport. The stores are acceptable.
P25	Impression at first sight is the airport cleanliness. Everything looks neat and tidy here. The airport could manage the check-in and security screening queues so that I don't have to wait for it. Since it is a small airport, nothing is complicated.
P26	I feel safe when I arrive this airport. The security screening has been checked twice. Safety is the most important thing for everyone's life so it's undoubtedly the first priority concern.
P27	This airport is quite small so the convenience is neutral. The airport provides more security check points when there are a lot of passengers. The total stores on commodities, souvenirs, and food look to be OK.
Respondents	**Transcripts Question 4.** **'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'**
P1	From my view, check-in counters of AirAsia, Nok Air, or Orient Thai are few compared to TG or PG's counters. Nowadays, passengers of low-cost airlines are not less than ones of full-service airline anymore. In fact, there are too many counters for Thai airways. Another thing that needs improvement is about security screening at the entrance gate of this airport. Even all drivers get the ticket from ticketing staff, but it is not a confirmation of security approval. The airport should provide other ways about security measure. Another area that looks dangerous is curbside. Curbside area is not well managed with a lot of fast cars. Surprisingly, whenever it rains, passengers always get wet because of no roof. Food and product price is very high for both Thai and foreign passengers. If an airport can give reasonable rental fee for tenant, I believe that the price will be also reasonable so that we can achieve. I think AOT should not focus too much on ten month-bonus for their employees, AOT should focus on the best and value service for customers.

Table C.1 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
P2	For here Phuket international airport, I think the way or distance or location between this airport and town is very very far and difficult to reach. I have to ask my friends to take me here otherwise I have to pay with expensive cost for taxi! I have heard that there are public buses passing this airport but it's still very hard for ones who have their baggage. I never tried that neither. Now, the place for parking is not enough, I think. A lot of cars go in and out every second. When I reach airport terminal, I found that the ramp in front of the terminal is not well managed in a good system. Clearly, check-in counters for some airlines are less compared to numbers of passengers. You can see the long long queue in front of Nok Air or Air Asia counters. Oh, another thing that I notice is about the security staff. I am not sure that staff at the check point pays enough attention to every details into the security check or not. They always talk with friends while using the hand scanners. Oh. I nearly forgot... about the food price! I don't know why the food price inside airport is very very high. The price is very expensive and there are not many choices of food for passengers ....
P3	It's quite difficult to answer. Usually, I have tried both TG or Thai Smiles, NokAir and AirAsia here and I believe all passengers want similar things such as quickness, safety, comfortability, basic facilities, Wi-Fi services, places for eating, and places for buying things. One thing that reminds me is about food! You should know that there is no free food service on board for passengers who fly with NokAir, AirAsia, or Orient Thai. I sometimes need to have something before flying but the price is not reasonable for all groups of passengers. In the past, there might have just TG or Bangkok airways which serve another group of passengers who have much money. Now, you see a number of low-cost passengers are increased but food price is not matched with us. Sometimes, I think it's not different between buying food within the airport and ordering something onboard. It's also difficult to find a restaurant or canteen that suited for Thai passengers who don't have much money. I heard that there is only one restaurant here ... might be Thai airways restaurant which is on the 3rd floor.
P4	For passengers who fly with low-cost airlines, we actually prefer save and quick service. There should be enough check-in counters, especially on prime time. I don't know why NokAir and Orient Thai counters have to be in the center point among check-in counters. Being at the center seems to be good but if you suggest the belt or feed belt, it's not applicable for the airlines. I think the airport should solve those problems otherwise it seems to be unfair for that airlines and passengers' bag. It looks like that airport allocates good positions for TG? I don't know. Moreover, seats in public area, I mean nearby check-in counters, at the arrival terminal, and here in the departure hall are not enough for total passengers. Some passengers who fly with TG are served in special lounge. And.... yes, there are no seats or spaces in front of some departure gates like gate number 66.
P5	Numbers and service points of toilets should be more. I think it's now not enough for passengers especially, females. Mates may have to work hard to make the toilet clean for the time being. Toilets are also more significant in some area like arrival hall and departure hall where a lot of passengers are stuck. Not only toilets but also public seats are not enough. I saw a lot of people with their belongings have to stand in the terminal even inside this room. I do not understand why there are not enough seats in spite of there are waste space. Another shock for me is that there are a lot of persons or agents who were trying to approach me on arrival. Airport should better manage this because I don't know they come with good or bad purposes. Airport should provide a clear sign on transport options that proved by the airport in term of safety.
P6	I need airport free WI-FI or even not totally free in this departure lounge. Airport should provide more personal space for passengers because I don't feel good sitting too close to a lot of people. It might be the limitation of airport structure. When there are a lot of departing passengers standing while waiting for flight, it reflects the airport attention. I think everyone pays tax for the airport equally and everyone should take advantages from same services. I'll try to remind my memory so that you could get useful information as possible. On that day of arrival here, i am sure they are taxi drivers or not but they seem to be a lot and are not well organized by this airport I mean Phuket. It might frighten the passengers. I hope the current construction of Phuket airport will make separated low-cost terminal happened.
P7	I don't know there is the restaurant for Thais or not since I do not see any signs or board mentioned about the restaurants. I want to know numbers, types, and location of restaurants in this airport. Shops inside the airport sell goods with high price. I know that product price is normally high at the airport but it's still high from my point of views.

Table C.1 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
P8	Here at Hat Yai airport, sometimes we found that there are a lot of group passengers especially ones who fly to Mecca. The airport should better be able to manage passengers in groups in order to efficiently process other ordinary passengers. Such a crowed period, the airport should separate the groups to another check-in place or another room otherwise some individual passengers are possible to miss the check-in but need to buy a new ticket.. This is my real and direct experience. In fact the airport should serve domestic and international passengers separately.. I mean at different places. Oh, I think public seats inside the terminal are not enough especially the place nearby check-in counters or restaurants. When we mention about restaurants, I prefer to mention and question about the high price not only for restaurants but all shops are expensive. For passengers who do not fly with TG, they need to find something with reasonable price to eat before takeoff since food service is limited on board. Passengers try to save money by not to buy onboard but food price at the airport is not different! Um airport should manage their flights (my flights) to get to the connecting gate (aerobridge) as possible. In case of rains or sunshine, passengers feel inconvenience.
P9	Airport direction signage along the road, I mean from outside to the airport should be realized otherwise we can get lost. Some signs are very small so we cannot notice while driving. More significantly, the signs shown in Thai not in English! Shall I move into the terminal? I think this airport is lack of food variety including shops for souvenirs. I have flown for several times and I know there is the rule prohibiting drinking water for passengers into the departure hall. I always have questioned that when I throw my bottle away, why the airport shops sell high price drinking water in the departure hall. I don't know the real reason. If there are reasons, airport should clarify by notice board or their staff or else it makes me confused.
P10	The serious point that I have faced at this airport is about dealing with group passengers. Many times I found that there are a lot of people traveling in groups such as ones who were heading to Mecca in the terminal. Huge numbers of people can make me crazy. Airport administrators should be able to deal with group passengers in another area or else it will affect other ordinary passengers. The administrators might have to concern on security staff and x-ray check at that time. For lady toilet nearby escalator, I found two of four rooms showing the sign 'out of order'. In fact, only 4 rooms are few. Not only the amount but also the cleanliness of the toilets should be cared. Airport should explain about the expensive price of food and goods in the airport. I think the price is too high to achieve even one dish to eat. This airport is also needed to see about insufficient parking lot. I know that there is overnight parking service here so that it's very hard to find a parking space for short time users.
P11	Um…I yearly fly to this airport around 15 times by NokAir or Orient Thai airline. The general is ok like I said but the food price is very high. Food and goods sold in this airport is quite expensive. If Airport can decrease price to me more reasonable, it will be nice for passengers not only Thai but foreigners.
P12	For low-cost passengers, the airport should lower the price of goods and food otherwise passengers cannot achieve the price and services. Passengers of low-cost airlines and of full-service airlines should get the same service but not the same high price like this. There are varieties of passengers flying with low-cost airlines today, not just fine restaurants but other classes of food and restaurants should be realized.
P13	Hat Yai shows high concerns on security because we notice that there are two point of security check before we come into this terminal. However, in details, I found security staff always chitchats with each other and did not pay much attention on persons passing the security checking process. It's very important for me and everyone who comes to the airport. Outdoor parking zone is not quite good for cars and passengers if it rains. I am surprised that why check-in counters are separated into two points. I wonder why AirAsia counters have to be far away from others. It's not convenient for passengers and airline, I think. And if you come here around September, you will find a lot of passengers and their relatives in the terminal and in airport area. You know that 1 passenger might have 10-12 relatives to say good bye. A lot of people, cars, and garbage make this airport untidy. This airport cannot show the ability to manage a numbers of people like that. I don't know if i raise the issue of high price on food and goods to you, will it be possible to recover or not. The price of food and goods is really high in airport until I am not sure they really want to sell or not. Also, airport should provide Wi-Fi in passenger lounge.

Table C.1 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
P14	Since the basic needs are here, it's difficult to suggest. This airport could also be improved in some ways. The airport might need to have another terminal for international or another terminal for the low-costs…it depends. This airport should make itself modernized in terms of decoration, facilities, seats, signs, and so on.
P15	The overall is accepted but I may suggest about the washroom. Even Chiang Mai airport is not too big from my point of view, but numbers of users is not less. From my experience, I think the women washroom is not enough here.
P16	In this room, waiting lounge for departing passenger, there are no enough seats. Even this time it looks ok but when there are many departure flights at the same time, some passengers have to stand while waiting. I think it's not fair for them or for me because we have to pay for airport tax at the same rate.
P17	Sometimes, when I arrived at the airport, I have to wait a bit longer than usual. If airport could manage on this, it would be perfect. Another issue on large number of people or passengers, airport has to realize more on capacity. For example, airport should better provide more security screening points at the entrance door. I saw there are security checking machines at different areas so airport might be able to do this.
P18	In case of crowded people, I think the parking lots are not enough. The security screening at the terminal gate is not efficient. That is, it's very slow when there are tour groups and the screening is not flowed. Airports should have measures to deal with a large number of people. Even the distance between airport and city is not too far, but the traffic may cause passengers to be late. I don't think there is Wi-Fi here but at this century, the internet connection is the must for people, especially for tourists. I am a man but I think that numbers of lady restrooms should be increase since I usually find long queues in front of the toilet areas.
P19	Even it's not difficult to reach the airport but the varieties or choices of ground transportation are still limited. As Chiang Rai airport is an international airport, Wi-Fi service is important otherwise the airport will be outdated. If the airport cannot afford free Wi-Fi, it's acceptable to pay 20 Baht for an hour of Wi-Fi service. There are still less food stores here especially for LCC passengers who did not reserve in-flight food services. As I mentioned, the airport should provide information counters with at least English speaking staff. Numbers of counters and staff look to be enough but without communication ability, it does not help any.
P20	Price of food is very very high compared to ones outside the airport. I never had chances to buy or eat food in this airport. I just know that there is only one restaurant for high class passengers who can afford the high price… not me. Transport modes to reach this airport are limited. I have to take a tuk tuk to this airport with 150 Baht. If there are public buses or SongThaew, it might be safer.
P21	The ground transportation in accessing to the airport is quite scarce. I have to take a taxi which charged me 120. Some people told me that the normal price is around 70 Baht.
P22	As I told you this airport is very small, I am quite ok for that. But the airport should provide Wi-Fi service for their passengers.
P23	Seat allocation needs improvement. I perceive there are not enough seats inside a terminal and inside this room. It might be better if the airport could manage proper areas for departing and for arriving flights separately. Another choice is separating between domestic and international flights. Numbers of gate is still less compared to flights and passengers. Importantly, numbers of toilets (especially for ladies) should be increased.
P24	The airport should provide places for eat… I mean the places where I can sit and eat. Not such an expensive restaurants but easy place to sit and eat. I am not sure there is the food service here.
P25	Security screening at the front gate should be thoroughly checked or else the checking will be useless. I can pass that point too easy. I don't mean that I brought some illegal things but the screening have to always be strict. The security staff should not overlook girls, children, or ones who are well groomed.

Table C.1 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
P26	Numbers of seats are insufficient and tight. Even now there are not many passengers waiting for airplanes, this room becomes crowded. I cannot imagine when a lot of passengers come into this room with limited seats. Another thing is about the toilets. Not only lady toilets but men toilets cannot be ignored. The airport should study on the capacity of airport toilets. Check-in counters here look different compared to ones in other airports. Check-in counters must be allocated at the right position. It should be easy to find out instead of being hidden at some corners. As I already told you, electric plugs should be provided at airports. Last, numbers and types of shops and restaurants are limited. Some passengers have to eat before flying.
P27	I think this airport has been built for long time ago since the building and airport style look very out of date. The airport management should renovate the airport so that it reflects both full functions and identity. Diversities of ground transportation are less and inefficient, more choices of transportation will ease passengers to come to and depart from this airport. Information service has to be improved in terms of foreign-language speaking staff. I saw a lot of information staff cannot communicate in English so what's for. I don't know it's because of the airport size or not, seat distance is too closed especially in this room--the departure hall.
Respondents	**Transcripts Question 5.** **'Apart from what we have discussed, what are your other suggestions for this airport?'**
P1	The airport should provide proper facilities for aging passengers and for all age groups.
P2	This airport should provide free Wi-Fi for passengers. Only passengers who fly with NokAir can access to the free internet Wi-Fi provided by NokAir.
P3	Airport staff should be friendly and more helpful.
P4	Phuket international airport should provide free Wi-Fi in this area.
P5	Um.. If the airport can provide free Wi-Fi for passengers, it is good. You know that most of people access the internet via their mobile or tablet.
P6	I saw staff tried to renovate or change new sign boards within terminal today… near the escalator. I don't think it is a proper way and time to do. If they just put the sign out and replace that will be ok but I saw they were doing everything there. It looks unprofessional. The last thing is that the airport should provide free drinking water station.
P7	No.
P8	Free Wi-Fi is need for most of passengers nowadays. It the basic needs for today! Also, the airport should provide public seats with plug as a charger for any personal equipment.
P9	It would be better if this airport can give us free Wi-Fi. Nothing else it is my first time arrival and first time departure.
P10	I fly with low-cost airlines but I think that everyone--passengers, who paid the same amount of tax, should gain the same service. If I have to walk from airplane's bay to terminal, I will not be happy for sure.
P11	I have said all I want to you so there is nothing left now.
P12	The airport condition is a bit old so improving or renovating the airport terminal will be very useful.
P13	Every passenger has the equal right from airport services. If airport can prepare a connecting gate for every flight, it would be great or else we might get wet or feel hot.
P14	Nice and attractive airport can attract number of passengers and make passengers happy.
P15	Airport should try to give accurate service, especially no delay flights if possible.
P16	Nothing
P17	I don't know this airport has a small clinic or first aids center or not. If not, the airport should provide for customers. If yes, the airport should provide information with clear and outstanding signs…its' important.

Table C.1 (Continued)

Respondents	Transcripts Question 5. 'Apart from what we have discussed, what are your other suggestions for this airport?'
P18	If it possible to provide buses or minibus for the airport-city route, it will be very useful. Nowadays, the minibus system of Chiang Mai is not good. It eases to cheat passengers in terms of both price and exact routes. Passengers have to pay tax for airport, I know. Passengers should get proper service. That's it!
P19	I think Chiang Rai Airport does not look like the international airport. This airport should be well decorated. The thing that surprises me is the airport use female staff to check both female and male passengers. It looks funny when a girl tries to check my body. She might be shy while checking and I don't feel comfortable from their checks.
P20	It's really good if the airport can provide a scale service before reaching check-in counters so that low-cost passengers can weigh their baggage before baggage check-in.
P21	No more. It's ok.
P22	Nothing.
P23	No more suggestions.
P24	It's difficult to find public local bus coming to the airport; I have to use the hotel limousine service to come here. If there is public transportation, it would be safer.
P25	That's all what I thought. No more comments.
P26	Now, I use Wi-Fi service of NokAir, my airline, which is really good for me. It would be better if the airport can provide free Wi-Fi for all passengers.
P27	It's possible to create contemporary decorated and performing theme at the airport. For examples, the airport can make value added by cultural shows, local music inside the terminal on weekends or on festivals.

Appendix C.2: Transcriptions on LCC Staff

Table C.2 Interview Transcription of Low-Cost Carrier Staff

Respondents	Transcripts Question 2. 'What are important things about carriers and passengers that airports should realize?
L1	The airport should be able to accommodate both passengers and airlines. Airlines have to pay for rental fee, parking fees, connecting gate fees, announcement fees, and so on. We have to pay for everything since everything is charged. If we don't want to be charged like the announcement, we do by ourselves in the departure hall. Managing carrying capacity is very important since a number of passengers have been increased every year. Good flow of passengers is important. To deal with the passengers' flows, the airport should concern on enough boarding gates and baggage belts on arrival. The most important thing is the safety and security. All passengers and airport users should be strictly screened at front gate so that it will assure passengers and our staff.
L2	The carrying capacity of the airport is very important. Airports should be able to allocate proper slot for all airlines. Being good at managing the operation is the must for airport operator. Airports have to know how to manage a number of flights in rush hours. Besides the airsides, check-in counter allocation is very important for airline and passengers to precede the departure procedures.
L3	For airlines, bays or parking areas for airplanes are important. Numbers of bay should be fit with number of daily flights at the airport. The connecting gates are needed as well. If our flight is assigned to park at the remote bay, we have to prepare buses or passenger steps. We want our passengers to be convenient as much as possible. Especially when it rains or hot, it's not fair for our passengers who pay the same rate of airport tax with the others. Within the terminal, the important things are check-in counters and baggage belts on arrival. Enough counters and belts will facilitate the passengers.
L4	Allocation on parking bay, check-in counter, and airline office is very important for airlines. Airport should be fair and sincere on managing parking bay. Bigger airplanes always get a chance with connecting gates. Remote parking bay is safer but it's complicated to deal. We concern on rains, sunshine, and security. The position of check-in counter is another significant point. It should be easy for passengers to notice. Flows and directions are also necessary. Another important thing for airline is an office. If the airport can satisfy us in parking bay, check-in counters, and office space, it's good.
L5	The most important thing is an aircraft bay. Even numbers of parking bay seem to be enough but not all are in a good location. I mean there are only 3 connecting gates for domestic flights and other 3 for international flights.
L6	Safety & Security is important for airlines, passengers, and everyone who works at the airport. Another thing is the equality of services for all passengers. The airport should concern on wheel chair passengers at first site. Bay for aircraft parking is important as well. If the airport provides us with the remote bay, the difficulties come. Our turnaround time is limited with 15 minutes for arrival and 15 minutes for departure. Using connecting gates is better.
L7	Airport capacity is important nowadays. This airport might not be planned to support this kind of aviation growth. There might were 2 flights per day in the past but now there are a number of flights per day. The space of the airport is still the same whereas numbers of flights and passengers are increased. Not only the terminal but the bays are not enough. There are only 2 bridges from all 5 bridges. It's not convenient for our passengers. Once we have to use the remote bay, the cost will be increased. We are the low-cost carriers; we don't want cost to be much increased.
L8	Um ...we are the airport's customers and we have to pay for fees. The important thing for us is about airline office, bay, check-in counters. We are happy with the suitable office now. You know that Every square meter of the airport is not free so we are charged. Some airline still has a container (located in airside area) as an office for ramp staff. Connecting gate is important as well. Airport must be ready to serve all airlines. Sometimes, there are high volume of flights, airport need to well manage with capacity and facilities. Check-in counters should be situated at a good location where is easy to be noticed.

Table C.2 (Continued)

Respondents	Transcripts Question 2. 'What are important things about carriers and passengers that airports should realize?
L9	Um..Many things are important. Parking space, airport signs and screen, security checking, check-in, and facilities.
L10	Security is the most important point for everyone. Airport staff, airline staff, passengers, and shop owners also require security in life, especially at the airport.
L11	Many things are important for airlines and passengers such as parking, signs, security, belts, aerobridges, toilets, banks, health services, internet, or arrival hall. Everything is important.
L12	If we think of passenger processes, parking, signs, airport staff, lifts, escalators, check-in system, shops, connecting gates are important for departure. On arrival, connecting gates, claim belts, even toilets and public transports are important as well.
L13	Airport should realize on safety and security, facilities, equipment, and everything related to customer services to highly satisfy its customers.
L14	All facilities and services at an airport are necessary for passengers and airlines. An airport should make everything to be in a good condition. Security, staff, passenger flows, area and spaces, and so on.
L15	Many things are important. For examples, safety measures, security staff, information signs, check-in, baggage claim, or even seats.
L16	An airport security is as important as the security staff. More, many processes are important too. We can think since the passengers access and arrive the airport. How to get the airport is important. Parking area is important. Safety measure is important. Toilets, food shops, connecting bay, and everything are important.
L17	Parking, signs, and security.
L18	Equality is important for airlines and passengers. Passengers with wheel chairs should have equal opportunity to get the service from airports and airlines.
L19	Everything is important for airlines and passengers. Again, everything is.
L20	Information is the most important thing for passengers and airlines. Passengers need clear and full information to process their flight. For the airlines, airport service is very important too. More, the concern on safety and security cannot be overlooked.
L21	Airport should pay attention to every detail on customer services. Easy processes with nice and friendly staff. Above all, security is the must.
L22	Um…everything is important… trolley, staff, signs, security machine, parking, toilets, check-in counters, departure hall, connecting gates, and so on.
L23	Safety is the most important issue for airport users. Safety machines and equipment, and staff are mutual significant. Loading and unloading passengers and baggage are important as well. The airport should provide enough connecting gates, conveyor belts on arrivals.
L24	Main airport services are important. That is airport staff, parking, security check, check-in, baggage loading, gate allocation, trolley, and so on.
L25	Security and good service.
L26	For passengers and airlines, check-in system, security, and Wi-Fi internet are important. Another thing is about the bridges which are required for all flights.
L27	Airport executives must realize on all passenger processes. How to access this airport is the airport's responsibility to cooperate with other organizations. Passenger services and facilities are crucial elements. Trolley, check-in counters, lifts, parking, signs, or internet connection is important.
L28	Safety and security measures are the most significant point at airports.
L29	Security is the most significant point. Passengers and staff should be safe in terms of life and assets.
L30	Many things are important for both airlines and passengers. For airlines, airport should care on basic facilities need for flight operation. Those are check-in counters, conveyor belts, departure hall, connecting bridges, and the security exactly.

Table C.2 (Continued)

Respondents	Transcripts Question 3. 'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?'
L1	Um…no
L2	I don't think there is.
L3	Some of airport staff is very helpful. They understand our procedures. Sometimes they offer helps to us.
L4	Sometimes, airport allows us to use the airport's meeting room. Since we have a lot of airline staff and we don't have enough space to do a monthly meeting, we ask the airport to use the meeting room for free. If the room is available, we can occupy it.
L5	It's good that this airport is located in urban area so the accessibility is easy. The overall performance of this airport is quite good even it does not open 24 hours. The good point is the security. There are many organizations to cooperate in security functions. This airport has ranges of services including bank service, taxi, and association. More importantly, check-in counters are adequate for all airlines.
L6	The airport has a good concern on security measures. The entrance gate and exit are fixed. Security equipment is modern enough. It's a good facilitation. More, there is staff from both airport and air force dealing with the security. Whenever the airport increases the bridge, it's good. We just have the free Wi-Fi for passengers here for 12 days ago so it's a great job. I hope not to hear more complaints on that.
L7	It's not really difficult if we need to operate more flights at the airport, they do understand. And another good thing is that the AOT arranges the meeting for every three months. There are related entrepreneurs appointed in the meeting. However, not all suggestions from the meeting are done.
L8	In fact, it's very hard to point on this. AOT provide free indoor parking lots for airline and AOT executives. However, most of AOT staff stay at AOT residence where is 3 Km. far from the airport, they prefer driving to work over riding or walking. It's good for staff but it's not good for passengers. The terminal building here is not yet congested. Toilets are clean.
L9	I think this airport can provide standard services and facilities with nothing special. All are acceptable.
L10	This airport tries to maintain the security measures. There were not much serious incidents happened in this airport.
L11	I don't think there is. It's just acceptable like seats and other airport services.
L12	Everything is normal, nothing is special. It's just acceptable.
L13	This airport provides variety of services such as shops, banks, post office, rental services and so on. It might because this is an international airport.
L14	There are not distinct services or facilities impressed me specifically. Everything is normal.
L15	It's ok that the airport has a variety of services such as banks, post office, prayer room, rental facilities. Besides this, it's nothing.
L16	Everything is acceptable with nothing outstanding.
L17	Nothing.
L18	Safety measures here are quite strict.
L19	The safety measures here are quite good. Security screening is double checked before the front gate and again at the front gate. There are many shops and enough rental facilities in the airport.
L20	This airport is quite strict on safety measures since this airport is on the risk area in the southern. Moreover, it's good that there is good cooperation with military force.
L21	In general, the security is quite good. Other facilities are acceptable.
L22	Security measures are quite good. A plenty of trolleys are ready to serve passengers. The check-in location and condition seems to be ok.
L23	I believe that this airport has tried best on safety and security concerns. Another service that eases our work is the post office. We don't need to go outside for sending parcels or mails.

Table C.2 (Continued)

Respondents	Transcripts Question 3. 'Could you please tell me anything that impresses you about this airport or anything that you think that the airport could efficiently perform?'
L24	This airport is located in the urban area. It's not difficult to reach. Check-in counters and condition are quite good. Airport executives care on safety and security.
L25	All are so so. This airport has free trolleys, information counters, check-in counters, waiting areas, tour counters, connecting gates, and so on.
L26	Ancillary services are OK. The airport has nice counters on car rents and tour services. Some other basic services are ok like trolleys and signs.
L27	I think it's nothing.
L28	It's good that this airport has prayer rooms even it's in the corner which is hardly to be seen. A prayer room is also good for all people who need their religious activities.
L29	This airport performs well in security awareness. The decoration reflects the locality of the north which is good.
L30	We are ok with the check-in system, it's easy. The security measure is acceptable.
Respondents	**Transcripts Question 4.** **'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'**
L1	If it's possible, I prefer the 1-floor terminal for both departure and arrival. It would be easy and quick for us and the passengers. To be better, without the connecting gate, we can save time and cost for each flight. Since we are the low-cost carrier, we have limited ground time. As long as we spend time on ground, our cost will be increased. This airport provides us with the connecting gate but 1 gate is used to serve 4 airlines which are not appropriate. We are not the first priority to be served by AOT but the full-service airline is. We pay the same rate on airport fee with nothing special. Moreover, an airport should well consider on flight timetable proposed by each airline. An airport should not allow all proposed flights to be operated at the same time.
L2	Since the arrival passengers and departure passengers have to use the same corridor, it eases the passengers to lose the way or go to the wrong directions. Our airline staff has to stand at different point to make sure that the passengers can go to the right way. We want all flights to park at the connecting gate. It saves costs and time for us. If we are allocated with the remote bay, we have to rent the shuttle bus which is more expensive than using the connecting gate. Moreover, the connecting gates are convenient for our passengers and better make good flows. Please imagine if we have 189 passengers in one flight and we have to transfer all of them to the shuttle bus, we might need 3-4 buses which are costly. Parking areas are not enough for airport users. Most of them are used for rental car parking. Another thing about the security is about the security staff at each check point. They should be well trained to strictly screen all airport users equally. I know that there are high staff turnover for that job. More, this airport should provide more seats for passengers in both public area and in the departure hall.
L3	The airport should equally provide connecting gate to all airlines. Among 7 connecting gates, there are 5 gates for big size airplanes whereas other two are for only small size airplanes. We prefer to use the connecting gate since we can do a quick turn to save our costs. We need only 35 minutes ground time. Things to be improved are about numbers of seats especially in the departure hall. Some gate like gate number 66 does not have any seats in front of the gate. Also, numbers of toilets are limited compared to a number of passengers. Check-in counters are not provided with the same standard. I saw some counters do not have the feed belt so that they might need more staff to help on baggage loading. The airport should provide the same service at the same price or the same price at the same service.
L4	If the airport can better position the check-in counters to be in the same area, it will ease passengers for check-in procedures. What to be improved is about passenger lifts. There is only 1 lift located in secured area where just authorized staff can get in. Relatives of disable passengers are not allowed to use that lift. Most of passengers ask for free Wi-Fi service since they have paid for airport tax or passenger service charge already.

Table C.2 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
L5	As said, numbers of bays are insufficient. The airport has to serve both schedule flights and charter flights. Even our flight was assigned to use the bay with connecting gate but once the flight delay or other flight arrive prior the scheduled time, we have to use the remote bay. It's our responsibilities to cope with all expenses using shuttle buses. It might be the limitation of airport structure that makes the departure and arriving passengers walking in the same corridor. Also, it would be better if the airport can provide more space for airline office and for passengers. Seats are not enough especially in the departure hall. Numbers of both the toilet rooms and toilet points should be increased.
L6	Even the security is quite good hear, it still need strict concern. All airport staff should pay attention to safety and security as the first priority. We are still afraid of terrorism. Once the passengers step on the airport's floor, airport staff must be strict. If it's possible, an airport should provide training courses on security for all relevant staff: AOT, subcontractors, airline staff, and so on. I am not sure that all airport staff who works on security task is well trained or not. Since there is high turnover of outsourcing staff, I am not sure the quality.
L7	The airport should provide enough aerobridge for all flights since it would be easy to manage. We don't want to pay more on staff, maintenance, and rental space if we have to use our own ramp bus. TG does have the ramp bus but it's hard to hang our task on TG. We cannot ask TG's ramp bus for rent since it was being used. Finally, we submit passengers to walk from airplane to gate. We (the low-cost airlines) believe that TG always has the first priority to get the bridge and it's not fair for us even we pay the same rate of service. We are low-cost from passengers' eyes but we don't have any discounts from airport. Instead, we have to safe cost by ourselves. Besides the airside, the position of check-in counter here is strange. It's hard to find the check-in counters. A number of passengers have complained on that. Another thing is about the security check point. Numbers of the checked points should be added at prime time. AOT should or must develop competency of airport staff to be active & alert, to pay attention to tasks, to communicate, to be good at foreign languages, and to be good in service.
L8	Check-in counters are not located in a good position. Once passengers come in the terminal, they always stop and look for the check-in counters. Finally they have to turn left and walk to the counters located behind escalators. In addition, check-in counter location is not proper when there are long queues. It looks crowded. Another thing is that the feed belts at check-in counters should be increased. We have to ask our ramp staff helping check-in staff since not all our counters have feed belt. For connecting gates or bridges, this airport should have at least 3 bridges to serve all airlines by considering flight time. When we have to use the remote bay, we need to allow passengers to walk to the terminal without bus services. Normally, shuttle buses are provided in the big and congested airports. In terms of passengers, most of them ask for parking lots and complain that the price of goods is not cheap. I think the airport should lower the rental fee to make the tenants survived and to make the passengers happy too. Moreover, airport should provide more varieties on shops; I mean the standard shops without monopoly. The only one restaurant in the airport seems to force passengers not to have food since the high price. An airport should better think on lowering the rental fee.
L9	The security checks should be stricter and the information counters should be more effective. Some staff cannot speak English and might not be helpful enough. Parking area is not sufficient. Shops and restaurants are limited. No halal food here. Belts at arrival hall should be increased. Also, the feed belts at check-in should be improved. All airlines are unequally allocated.
L10	Um.. I think this airport did not provide enough parking spaces. It's congested. I don't think the feed belts at check-in counters are well designed. It's quite unfair for some airlines. More, baggage claim belts are not enough in case of many flights at the same time.
L11	I think that many parts need to be improved. An airport unequally treats for different types of airlines. We sense that TG and Bangkok Airways are better treated and facilitated over the low-cost airlines. The airport should add or manage the aerobridges for all airlines or might provide transferred bus services from bay. Toilets are quite less compared to huge numbers of passengers. Wi-Fi is also necessary for present travellers.

Table C.2 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
L12	We do believe that airport staff does not provide same services to each airlines. Low-cost airlines always get low priority of every service such as office, connecting gate, check-in counters, claim belts, and so on. The airport should provide enough connecting gates for every flight, enough and clean toilets, lifts, and security. In case of emergency, I don't think the security staff can deal with it.
L13	The most serious issue is about security staff. I don't know the recruitment progress of such staff but the young staff cannot make me feel trusted and safe. Parking space is urgently needed to be renovated as well as lifts and escalators. Now, passengers and flights are growing, the claiming belts should be added or renovated to make a good flow at the arrival room. For low-cost passengers and staff, it would be better if an airport can provide food stores with reasonable prices. Now, numbers and types of restaurants are limited.
L14	It's good to have this question, many things need improvement. For examples, toilets, parking, seats, signs, departure gates, internet system, or airport staff. Numbers of departure gates are not enough especially the connecting gates. At the corridor, there are only two counter-lanes for both arriving and departing passengers which will cause confusing for those passengers. Parking is the serious issue for both passengers and staff.
L15	First of all, please know that AOT always keep TG and Bangkok Airways as the first priority of providing any services. Most of the time, we, the low-cost airlines are always assigned to park at the remote bay instead of connecting bridge. I think some facilities are still needed to be improved. Insufficient parking areas, defective baggage transfer at check-in, belts on arrival, connecting bridges, insufficient seats at departure hall, and WI-FI must be improved. Those things affect both passengers and airlines' processes.
L16	It's better to provide passenger lifts for disable passengers. The airport should consider the capacity on parking bay with high frequency of flights. Low-cost passengers do not expect to try superb food at the airport so simple food shops with reasonable price are needed. Exactly, the free Wi-Fi connection should be available at this big airport.
L17	Cheap restaurants. Lifts, clear signs, parking space, Wi-Fi, and prayer room.
L18	Lifts or pathway for wheel chair passengers should be reconsidered. Ramps are not in a good position. There is no lifts for those passengers in the terminal. In addition, Wi-Fi connection is lacked. Banks services should be added besides the ATM. And another important point is about parking area. The parking space is limited as well as the halal food.
L19	I am not sure that this is for low-cost or for all. The airport should improve its information signs (clear and multi-language), parking, Wi-Fi internet, and departure hall (seats).
L20	The overall is ok but some facilities might need a bit improvement. Toilets should be well cared. Left luggage service should expand point of services to domestic area. Parking, multi-language signs, and seats should be improved.
L21	Would it be possible to tell you with the following things? Toilets, health care, information services, public phones, and Wi-Fi. You know that even most of people have their own mobiles; public phones or free calls are still needed.
L22	The most important thing to be improved here like in other airports, I think 'toilets' is needed. The airport should always make the toilets clean and enough. When passengers are crowded, no parking space available. Most of passengers ask me to left baggage around this area but we have one point closed to international terminal. When there are a number of flights, all seats in departure hall were occupied which means that the others have to stand and wait for flight boarding. I think that passengers already paid for their services via airport tax, they good gain reasonable services.
L23	Parking and sings are still bad. There are not enough parking spaces even those are charged. More, we still found passengers ask us about the places in terminal which means the information signs are not qualified. We are not sure that information staff can speak foreign languages or not. The departure hall is crowded with passengers with no seats. Oh, the claiming points on arrival are not enough.
L24	Numbers and types of food and restaurants should be increased. Numbers and condition of toilets should be concerned. Baggage claiming points are not enough for all flights. Information signs should be renovated with foreign languages like Chinese and English.

Table C.2 (Continued)

Respondents	Transcripts Question 4. 'Could you please raise areas or issues that the airport needs to improve for carriers or for passengers?'
L25	This airport should improve the check-in counter position since it's hard to be noticed. Some counters don't have feed belts. Staff has to carry passengers' checked bags by themselves. The security check should be stricter. Security staff should not talk each other while working. Baggage claim belts are not enough. There is only 1 belt now.
L26	Airport staff should provide more friendly services. They should realize that we paid for our services. Check-in system is not well planned in a good location. I cannot trust on security staff. They are always new for me. Bridges should be well allocated or added. The shops and restaurants are limited. Low-cost passengers always buy only snacks instead of full lunch or dinner. There is only one expensive restaurant so called monopoly. Staff always goes out somewhere for lunch.
L27	Airport should be strict on safety measures. Food price should be monitored. Internet or Wi-Fi is the must for travellers. Everything needs improvement. Toilets are at the strange location --upstairs. The serious issue is about the bridge. We prefer using bridge instead of other choices. We can manage enplaning and deplaning passengers by the limited time.
L28	The airport, however, should provide clear, safe, and cheap public transport from airport to town. I saw taxies parked in front of the airports without coming into the airport. Toilets are the place where airport should pay attention to too. Here in this airport, the claim belt is not enough, exactly.
L29	Um…the cleanliness and numbers of toilets should be improved. Claiming belt is not sufficient. Also, departure hall is small. Fewer parking spaces. Less trolleys.
L30	Airport staff should be the first priority for training or improvement. They should be friendly to staff at all levels. It's better to use sweet words or compromised words with us. We are customers of an airport but do not forget that we PAY. It's more than good if our flights are assigned with connecting gates. The airport must reconsider on number of waiting seats, parking lots, public transport connection, and related signs. There are too much signs at some areas whereas some has less.
Respondents	**Transcripts Question 5.** **'Apart from what we have discussed, what are your other suggestions for this airport?'**
L1	The airport tax of AOT is quite high so it should be decreased in order to stimulate traveling. Public transportation between airport and town should be realized. AOT should provide the airport bus or ease passengers to find the public bus. Not all of passengers who fly with low-cost airlines can afford the limousine but the cheaper transportation is required. Also, an airport cannot provide enough parking spaces for passengers. More importantly, the parking is not free so it causes high numbers of car parked along the way to the airport, not inside. More, the airport should provide free Wi-Fi within the airport to facilitate passengers.
L2	The security is a crucial part of airport and aviation service. Strict security screening is the must to do. Sometimes we found that there is a person used another one's ID card and come into the secured zone. It seems to be not secured. Another topic is about taxi service. Illegal taxi services can be found at this airport. This affect to the passengers' security and to the image of this airport and the province.
L3	The security screening should be stricter to make sure that everyone in the airport will be safe. Even sometimes we want to have the announcement within the terminal but it's better to announce within departure gate since there is no charges. If we want our message to be announced inside the whole terminal, it's charged.
L4	It would be good if the airport can achieve 'first comes, first served' with airplane parking. I mean it should be fair and sincere. The airport can consider from the aircraft size as well. It's good that airport arranges the meeting and invites representatives of immigration and airlines to join the meeting. However, there are no representatives of low-cost carriers in the meeting.
L5	Connecting gates are less than numbers of flights. Providing good service and full facilities for airlines and passengers would be more than great.
L6	Again, the airport should take the responsibility on taking care handicapped once they arrive since the airport staff is the first person who meets that kind of passengers at the entrance. It's the airport image too. The airport can then transfer those passengers to be under the responsibilities of the airline.

Table C.2 (Continued)

Respondents	Transcripts Question 5. 'Apart from what we have discussed, what are your other suggestions for this airport?'
L7	The airport should realize about the capability to serve a number of flights especially in 2015 for AEC. We might need LCC terminal. We are often asked and complained by passengers about no-sound TV, lifts, toilets, and so on. We have informally informed the airport staff about the circumstances but it might because of the government system, there was no action. The reason is that anybody who found the problem must be the ones who directly send the formal letter to AOT which is non-senses. Once the AOT staff sees the problem, just try to cope with it.
L8	In the near future, there would be more flights from existing airlines and more airlines opening new flights at this airport. Thus the airport has to realize on the capacity. Another thing is about lighting on the way to and from airport. It's approximately 3-5 KM.. from the airports that there is no lights at a night time. We don't know how AOT coordinates with other organization but there were accidents that cause the death. Vision of airport executives is important. Normally, we have a chance to join the meeting with airport executives every 3 months.
L9	Everything should be improved in overall.
L10	There is no Wi-Fi internet here at Phuket airport. Nowadays, internet connection is the must for travellers.
L11	We heard that the airport will increase 100 Baht of airport tax soon by next year. The airport should think carefully on this if the airport provides valuable service to such the tax price.
L12	An airport should realize that airlines, passengers, or tenants pay for airport fees. However, we are airport customers that airport should well treat all parties.
L13	The cleanliness and condition of the toilets should be well concerned. Wi-Fi service is the must for contemporary airport nowadays. Seats provided at public area must be increased too.
L14	The airport should increase numbers of front gates and departure gates. It's congested and crowded in the terminal.
L15	The toilets are not well monitored for the prompt services. They are often unclean.
L16	The big airport always serves better services for full-service airlines over the low-cost airlines. For examples, bay assignment, claim belts assignments, or even the monthly airport meeting. Sometimes, low-cost representatives are not invited to the meeting. Sometimes, our ideas or requirements are ignored. It's normal for us.
L17	No.
L18	Equal treats.
L19	We don't feel we get the same service standard compared to TG.
L20	Nothing
L21	Most of passengers need advice on how to reach their destination. I mean some asks about ground transports while some ask about the tour service.
L22	I think today's airport should provide free Wi-Fi service for all clients.
L23	That's all.
L24	It's better to have a free Wi-Fi here.
L25	There should be the Wi-Fi services.
L26	It would be awesome if the airport can provide Wi-Fi access.
L27	We need easy food stores or restaurants with cheap price. The airport should be renovated in overall since it looks old.
L28	No.
L29	Oh… another important thing is the Wi-Fi connection.
L30	Nothing

Appendix C.3: Transcriptions on Airport Executives

Table C.3 Interview Transcription of Airport Executives

Respondents	Transcripts Question 2. 'What are important things about the carriers and passengers that this airport concern about?
A1	Service and satisfaction are important. We want to serve all customers with the quality and want them to be satisfied with our service. The carrying capacity is important as well. Since numbers of passengers get higher and higher every year, terminal building capacity is still the same. This might cause passengers dissatisfied with the service. We want everyone happy.
A2	Airport carrying capacity is important. Our existing building and its structure were not planned to subtend a large number of passengers like today. All airport services and facilities are important. We must satisfy all customers; airlines, passengers, or airport users. Another thing is parking bay. We, an airport have to provide adequate parking bay, especially the bays connected to gate.
A3	Capacity is very important for airport. We are in the service industry; we prefer to satisfy all users. Now we cannot serve all requirements from new users like international airlines so we denied. They want to operate flights around midnight but we cannot accept since our operating hour is 06.00-24.00. Each airport has different operating time. Chiang Mai and Hat Yai operated until 22.00. Sometimes, there are 2 or several aircrafts have to land at the same bay so they have to wait for it. Every task has to follow the SOP (Standard Operating Procedures) but monitoring and controlling are crucial. Monitoring on airport service is really important too. We have airport meeting twice a week with Heads of 7 divisions. We do have a morning coffee once a week.
A4	The availability of slot is important. Since there are a lot of flights and airlines, the slot might not be satisfied. And we use 'first comes, first served' for connecting gates. Now, this airport is quite congested to carry high numbers of passengers. Full and well equipped facilities are desired.
A5	We pay attention to all customers fairly. We serve the best service.
A6	Passengers should be comfortable using the airport services. Good counters, toilets, pathway, connecting gates and anything are important. We also pay attention to facilities for handicapped. The airport capacity is the most important thing. We plan to improve our carrying capacity: runways, taxi ways, turn path, connecting gates, check-in counters, indoor parking lots, x-ray machine.
A7	For airlines, as our customers and our partners who have to serve passengers like us, we must consider all services and facilities that airlines need. We must prepare runway, taxiway, aerobridge, check-in counters, baggage belt, signs, and related technologies that might affect passenger services. And for the passengers, we try to make them highly satisfied since they arrive at and depart from an airport. The important thing that we concern are cleanliness, parking area even floor, wall, or ceiling. We now have approximately 400 parking lots with roofs. We care that our facilities can serve for everyone, all ages, all genders, even handicapped
Respondents	**Transcripts Question 3.** **'Could you please tell me anything that this airport could efficiently perform?'**
A1	We have tried our best to deliver good service to our customers. We have managed our limited space to serve everyone. We have medical care service where registered nurse stands by for facilitation.
A2	We provide a good service for airlines and passengers. We try to facilitate our customers with good system and equipment.
A3	We pay high attention to take care our passengers. We do concern on staff's proper manners and services. For first comers, we outsource staff to specifically take care of them at the arrival hall. Most of passengers are served with that are Chinese. Most of Chinese cannot read English or Thai. Some passengers don't know where the restaurant is or where the public bus station is. We have tried our best even it cannot cover sometimes. We concern on facilities, cleanliness, stairs, and toilets. We need more cleanliness. I myself step on to check everything every day. We cannot ignore the security system even there are no threats. It needs to be stricter.

Table C.3 (Continued)

Respondents	Transcripts Question 3. 'Could you please tell me anything that this airport could efficiently perform?'
A4	First, we provide good facilitation once the aircrafts landed from the airside: Bay and the security. Second for passengers, we concern all services since they arrive the airport. We have to make sure the condition of our equipment: baggage belts or information counters.
A5	We have paid attention to all services. We care on all information signs. Information signs must be clear and shown with multi-language. We do have three airport help staff per shift: one in domestic arrival, one in international arrival, and one in the terminal/hall. There are 2 shifts per day: 08.00-17.00 and 17.00 until the last flight. Most of passengers ask the airport help for baggage, hotel location, and public transports. Chinese cannot speak English. We are lucky that we have police, soldiers from army and air force to take care for security.
A6	We can afford to maximum 2 or 3 million passengers per year. We will have 1 million passengers this year. We now have only 2 connecting gates and 3 remote bays so we plan to add one more connecting gate soon. Our plan was already considered by AOT Board and waited for National Economic and Social Development Board. Normally, the new bridge costs around 26 million whereas the second hand costs around 16 million baht. We allocate 1 connecting gate for National carrier like TG which flies with the big aircraft like airbus as the 1st priority. We try to facilitate all airlines with our best. We put the budget 22 million for the turn path. It would be easier for big aircrafts including the low-cost airlines. We also planned to have another 10,000 liters fire engine which cost 32 million. We do care on the security so we will have one more x-ray machine at international departure. We are sincere to serve and solve problems for passengers so that we set the 2 small counters with information staff in front of the departure hall and in front of the arrival. It's quite effective. We did increase numbers of EOD staff (security). We do the training for security, fire, service, first aids, flight procedures, and languages.
A7	We have provided all services and facilities as much as we can. I mean we use our maximum capacity we have to serve the customers.
Respondents	**Transcripts Question 4.** **'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'**
A1	At this airport, both domestic and international flights are in the same terminal. In the near future, we planned to separate domestic terminal from international terminal. Also, another building for only parking is concerned. Nowadays, we have limited space so that numbers of seats are restricted. If an airport can provide the low-cost terminal for all low-cost carriers, we might be able to provide proper services and functions as LCCs need. It might be less convenient but it's cheaper and easier to be managed. Now, both FSC and LCC get the same level of service from airport which is might not be fair for the full service airlines.
A2	Now we have 10 fixed counters on east and other 10 on west. We did not separate domestic and international flights for check-in counters. It depends on each airline to operate the counters itself. It would be better to apply the CUTE check-in system which will manage long queue or congestion in front of the check-in counters. CUTE system will be good for both airport and airline. Airport staff has to assign counter number for the airlines time to time and day to day and airlines will get unfixed counters. For examples if NokAir has a lot of flights, that airline might be assigned to use more than 2 counters. The airport plans to have another ramp for handicapped. Now we have only 1 way for wheel chairs which might be few. Currently, our airport is quite small compared to passengers and flights. Our three connecting gates are used for both domestic and international flights. Connecting gates are still more required. Low-cost love to use connecting gate like the full-service airline too.
A3	We are more than pleased if any airlines want to operate flights here but it should be the time that we have enough slots. In fact, we serve the same and fair service to both full-service carriers and low-cost carriers. We use 'First comes, first served' principle to identify the gate number. Some might get connecting gates while some get remote bays. Most of airlines prefer convenience over cost saving, we are sure. Passengers do not love to walk from airplane to get a bus and then reach the airport terminal. For the counter allocation, we do have criteria announced. For examples, 180-190 passengers, an airline will have 3 counters. If the aircraft is bigger, we allocate 4 counters.

Table C.3 (Continued)

Respondents	Transcripts Question 4. 'Could you please tell me areas or issues that the airport will improve for both low-cost carriers and LCC passengers?'
A4	If it's possible we should hire the new check-in system which will be related to counter allocation to our airport. To utilize check-in counters, the current fixed system should be reviewed. It might not match with some airline system but it must be more useful in overall. On the prime time, our toilets are not clean as expected since it's hard to clean once there are a lot of toilet users.
A5	We don't have enough and proper located elevators for handicapped now. It's one of the building restrictions since the building is built for long time. The structure cannot accept to have another lift. This airport has built for 70-80 years at town not in the rural like others. Numbers of aircrafts and flights increased, it's hard to allocate the bay. We also have the limitation on our staff. We might have to reconsider both numbers and responsibility of airport staff. Another thing is about the cleanliness of the toilets we still heard that from passengers. Ladies need more on toilets. We do still have problems learning from airline that international passengers and domestic passengers have to walk in the same corridor. It's easy to be confused.
A6	Many airlines want to come to Thailand. We still have available slots for airlines. We do have high numbers of passengers from Nok Air. Yes, it's our income from airport tax. 70% of airport tax will be the budget for airport facility development. For low-cost, we did not assign the priority in using the connecting gates but we use 'First comes, First served' concept. Sometimes, we cannot allocate all flights to park at the connecting gates so some of them have to let passengers walk which is the risk and unsafe.. not really. In fact they have to use buses but buses are not enough.. so how to deal with. We always set the meeting with airlines every 2 months. We plan to expand the airport from code D to code E which needs some more standard like runways, taxiways, parking bay (3 to 5), fire engine, and so on. We might have a hangar invested by Singapore. In terminal building, we might need to think of arrival hall for international flights. Currently, we have 1 arrival hall mutually used for both domestic and international. If numbers of passengers are increased, we need to change our floor plan. We do need to have more baggage belt for domestic arrival. We now have 8 check-in counters with feed belt so we plan to add more 4 feed belts at the check-in counters. It will ease airline staff to work. Nok Air now has 5 counters (5 flights), Air Asia has 3 counters (4 flights) and TG has 6 counters. We plan to add more 4 counters for Bangkok Airways. And if we can adopt the CUTE system for check-in counters, it would be good for airport and airlines. We have to improve our service on numbers of toilets and airport taxi service. There aren't authorized taxi services within this airport. We are providing free Wi-Fi service. We also improve language capability of our staff. Besides English, Chinese and Japanese are important.
A7	Since this airport was built by Department of Civil Aviation in 1992 which is more than 20 years ago. Then, the airport was transferred to be the AOT's responsibility in 1998. Now, this airport is quite congested and one reason is because of the physical limitation. Now, there are just 2 aerobridges which need to be added to 3-4 bridges to afford the high number of flights. In the near future, also, we might need CUTE for our check-in counter management to utilize our check-in counters in hands for all airlines and all flights equally. For the CUTE check-in, SITA is a service provider on this. Most of passengers request Wi-Fi service which is already in our plan. More, the baggage belt might be added since there are growing numbers of flights. It can better facilitate passengers when there is more than 1 arriving flight at the same time.
Respondents	**Transcripts Question 5.** **'Apart from what we have discussed, what are your other ideas on airport operation?'**
A1	Our local tour representatives are not well managed yet. We often find tour representatives in a mess raised up the signs with passengers name at the arrival terminal. The representatives are investigated by the security staff but it's still unsystematic.
A2	Sometimes we cannot well control the quality of outsourcing tasks; housekeeping or cleaners or security staff. There is only one elevator where cannot be seen from outside. It is in the secured zone. It might be added with the new budget next year.

Table C.3 (Continued)

Respondents	Transcripts Question 5. 'Apart from what we have discussed, what are your other ideas on airport operation?'
A3	We have 2 taxi rental service companies where drivers' names are fixed and listed. All drivers are screened before permission. If there is an incident with the taxi, we know who the driver is. Two taxi companies provide the same price. We allow local Song Thaew to drop passengers at an airport. Passengers can take that local transport from downtown but that transports are not allowed to take our passengers from the airport area. We concern much on safety and security. We hire outsourced staff for cleaning and security for 4-5 years.
A4	In case of flight delay, some passengers gave complaints to our airport staff which is not correct. It's not our task to make the flight on time.
A5	AOT always has the meeting with all relevant parties: AOT, concessions and outsourced companies. Some of tour company has withdrawn from the airport since passengers and tourist behavior has changed. They love to reserve everything via the internet at home before they come.
A6	Now, there is the protest in Thailand, I mean it's the political issues. This situation affects the decision of airlines or charter flights. We have to loose many flights prefer to fly to here since the reason of Thailand politic circumstances. Such as MU (China Eastern Airlines) or TR (Tiger Airways). That's a pity for high season this year. We, the AOT still uses the emergency plan at all airports followed the Internal Security Act. Among 6 managers of AOT airport exceptional Don Mueang, 5 managers will be retired next year. Airport executives are important for airport development. It's not easy to manage or change the building originally created by Department of Civil Aviation. However, we can do the maximum expansion as Don Mueang International Airport.
A7	Normally, we set the meeting every 3 months for airline representatives and AOT staff. We always discuss on aerobridge needs. We use first comes, first served concept for all airlines. For the LCCs, they need shortest ground time at 25-30 minutes which make their staff tired on baggage unloading and loading. Aerobridge charges are different between 0-30 minutes and more than 30 minutes. We know that LCC want the safest way. However, the charging price of smaller aircrafts is cheaper than the big ones. Most of the LCCs use small aircrafts. They try to safe cost even the flight announcement. They don't prefer using AOT services since it's charged but they decided to announce by themselves in the departure hall. We are the private enterprise but our processes are more complicated than other government organizations. We adopt all kinds of systems and rules into our organization. Another important thing is that the vision of executives. Better and clear vision of executives can minimize problems that can happen in the next 10 years. We, AOT, should utilize our areas to be most fruitful to our organization and public.

Appendix D

Interviewees' Profiles

Table D.1 Interviewees' Profiles: Low-Cost Carrier Passengers

Name	Gender	Age	Nationality	Residence
P1	Male	36	Thai	Phuket
P2	Female	40	Thai	Bangkok
P3	Female	27	Thai	Nonthaburi
P4	Male	56	Thai	Phuket
P5	Female	34	Foreigner	Canada
P6	Male	28	Foreigner	Spain
P7	Female	33	Thai	Samutprakarn
P8	Female	54	Thai	Songkhla
P9	Female	37	Foreigner	Malaysia
P10	Female	25	Thai	Songkhla
P11	Female	57	Foreigner	Malaysia
P12	Female	52	Foreigner	USA
P13	Male	24	Thai	Bangkok
P14	Female	41	Foreigner	UK
P15	Female	24	Foreigner	Canada
P16	Female	34	Thai	Bangkok
P17	Female	52	Thai	Chiang Mai
P18	Male	30	Thai	Sakon Nakhon
P19	Male	42	Foreigner	Belgium
P20	Female	26	Thai	Trang
P21	Male	33	Foreigner	Spain
P22	Female	27	Foreigner	England
P23	Female	25	Thai	Chiang Mai
P24	Female	38	Thai	Nonthaburi
P25	Female	23	Foreigner	Combodia
P26	Male	29	Thai	Nakhon Nayok
P27	Male	29	Thai	Nakhon Ratchasima

Table D.2 Interviewees' Profiles: Low-Cost Carrier Staff

Name	Gender	Age	Task / Position	Work Experiences
L1	Male	41	Station Manager	9 years
L2	Female	34	Station Manager	9 years
L3	Female	36	Station Manager	9 years
L4	Female	40	Station Manager	9 years
L5	Female	37	Supervisor	9 years
L6	Female	40	Duty Executives	10 years
L7	Female	34	Station Manager	9 years
L8	Male	39	Station Manager	10 year
L9	Female	21	Ground Attendant	1 year
L10	Female	22	Ground Attendant	1 year
L11	Female	33	Ticketing	9 years.
L12	Male	29	Passenger Services	4 years
L13	Female	30	Ground Service Agent	8 years
L14	Female	31	Ground Service Agent	8 years
L15	Female	36	Passenger Services	15 years
L16	Female	38	Ground Service Agent	8 years
L17	Female	25	Ground Service Agent	2 years
L18	Male	30	Guest Service	2 years
L19	Female	30	Ground Service Agent	8 years
L20	Female	26	Ground Service Agent	1 year
L21	Male	29	Ground Service Agent	9 years
L22	Male	32	Ramp Master	8 years
L23	Female	38	Ground Service Agent	6 years
L24	Female	27	Ground Service Agent	3 years
L25	Female	26	Ground Service Agent	2 years
L26	Male	26	Ground Service Agent	1 year
L27	Male	25	Ground Attendant	2 years
L28	Female	38	Ground Attendant	10 years
L29	Male	33	Ground Attendant	8 years
L30	Male	36	Ramp Master	5 years

Table D.3 Interviewees' Profiles: Airport Executives

Name	Gender	Age	Task / Position	Work Experiences
A1	Female	54	Head of Airport Service Division	30 years
A2	Female	48	Airport Service Division	25 years
A3	Male	59	General Manger	30 years
A4	Male	N/A	Head of Airport Service Division	20 years
A5	Male	39	Airport Service Division	14 years
A6	Male	59	General Manger	34 years
A7	Male	49	Head of Airport Service Division	27 years

Appendix E

Item-Objective Congruence Results

[1 = Consistent, 0 = Do not confirm, -1 = Inconsistent]

Table E.1 Item-Objective Congruence Results

Items, Experts, Scores	1	2	3	4	5	Total	Mean
Part A: Travel Experiences							
1. Your main purpose of this trip?	1	1	1	1	1	5	1
1) Leisure	1	1	1	1	1	5	1
2) Education	1	1	1	1	1	5	1
3) Visit friends / relatives	1	1	1	1	1	5	1
4) Business	1	1	1	1	1	5	1
5) Meeting / Seminar	1	1	1	1	1	5	1
6) Others	1	1	1	1	1	5	1
2. How many times you have visited this province?	1	1	1	1	1	5	1
1) This time is my first time	1	1	1	1	1	5	1
2) 1-2 times	1	1	1	1	1	5	1
3) 3-4 times	1	1	1	1	1	5	1
4) 5-6 times	1	1	1	1	1	5	1
5) 7-8 times	1	1	1	1	1	5	1
6) 9-10 times	1	1	1	1	1	5	1
7) More than 10 times	1	1	1	1	1	5	1
3. Normally in the past, what modes of transport did you use to get to this province?	1	1	1	1	1	5	1
1) By train (Exceptional for Phuket)	1	1	1	1	1	5	1
2) By rental car	1	1	1	1	1	5	1
3) By public bus / coach	1	1	1	1	1	5	1
4) By Thai airways / Bangkok airways	1	1	1	1	1	5	1
5) By low-cost airline (e.g. Air Asia, Nok Air, and Orient Thai Airlines)	1	1	1	1	1	5	1
6) By personal car	1	1	1	1	1	5	1
7) Others	1	1	1	1	1	5	1
4. Accompany persons	0	1	1	1	1	4	0.8
1) Alone	0	1	1	1	1	4	0.8
2) Spouse / lover	0	1	1	1	1	4	0.8
3) Friends / Colleagues	0	1	1	1	1	4	0.8
4) Family	0	1	1	1	1	4	0.8
5) Others	0	1	1	1	1	4	0.8

Table E.1 (Continued)

Items, Experts, Scores	1	2	3	4	5	Total	Mean
5. Please specify the 'number' of your accompanying persons including yourself	1	1	1	1	1	5	1
6. Travel arrangement	1	1	1	1	1	5	1
1) Own arrangement	1	1	1	1	1	5	1
2) Package	1	1	1	1	1	5	1
7. Reasons for choosing low-cost airlines (e.g., Air Asia, Nok Air, and Orient Thai Airlines)?	1	1	1	1	1	5	1
1) Price	1	1	1	1	1	5	1
2) Flight schedule	1	1	1	1	1	5	1
3) Airline routes	1	1	1	1	1	5	1
4) Airport location	1	1	1	1	1	5	1
5) Airline service	1	1	1	1	0	4	0.8
6) Flight frequencies	1	1	1	1	1	5	1
7) Easy booking	1	1	1	1	0	4	0.8
8) Others	1	1	1	1	1	5	1
8. Please choose ONE airline that you frequently use ***within*** Thailand	1	1	1	1	1	5	1
1) AirAsia	1	1	1	1	1	5	1
2) Bangkok Airways	1	1	1	1	1	5	1
3) Happy Air	1	1	1	1	1	5	1
4) Kan Air	1	1	1	1	1	5	1
5) Nok Air	1	1	1	1	1	5	1
6) Orient Thai Airlines	1	1	1	1	1	5	1
7) Thai Airways	1	1	1	1	1	5	1
8) Others	1	1	1	1	1	5	1
9. Approximately, You fly with domestic low-cost airlines within Thailand approximately…….flights per year	1	1	1	1	1	5	1
10. In last 1 year, this is your ……..time(s) arrive at and depart from THIS airport.	1	1	1	1	1	5	1
11. In last 1 year, this is your ……..time(s) flying by low-cost airlines to and from THIS airport	1	1	1	1	1	5	1
12. On departure, your average time spent at THIS airport……..hour(s)…….minute(s)	1	1	1	1	1	5	1
13. On arrival, your average time spent at THIS airport…… hour(s) …….minute(s)	1	1	1	1	1	5	1
Part B: Level of importance and efficiency							
1. Accessibility to the airport	1	1	1	1	1	5	1
2. Parking area	1	1	1	1	1	5	1
3. Seats in public area / seat allocation	1	1	1	1	1	5	1
4. Stair / lifts / escalators within terminal	1	1	1	1	1	5	1
5. Airport information desk	1	1	1	1	1	5	1
6. Flight information screen	1	1	1	1	1	5	1
7. Public announcement	1	1	1	1	1	5	1
8. Information signs within airport	1	1	1	1	1	5	1
9. Airport staff	1	1	1	1	1	5	1
10. Security screening	1	1	1	1	1	5	1

Table E.1 (Continued)

Items, Experts, Scores	1	2	3	4	5	Total	Mean
11. Check-in system	1	1	1	1	1	5	1
12. Baggage check-in (departure)	0	1	1	1	1	4	0.8
13. Retail shops	1	1	1	1	1	5	1
14. Restaurant / eating facilities	1	1	1	1	1	5	1
15. Departure hall	1	1	1	1	1	5	1
16. Aerobridges (terminal-airplane)	1	1	1	1	0	4	0.8
17. Passenger steps (terminal-airplane)	1	1	1	1	1	5	1
18. Airfield bus / shuttle bus (terminal-airplane)	1	1	1	0	0	3	0.6
19. Arrival hall	1	1	1	1	1	5	1
20. Baggage claiming system (arrival)	1	1	1	1	1	5	1
21. Baggage belts (arrival)	1	1	1	1	1	5	1
22. Baggage drop service	1	1	1	1	1	5	1
23. Baggage carts / trolley	1	1	1	1	1	5	1
24. Tour / hotel counters or travel agency	1	1	1	1	1	5	1
25. Car rental facilities	1	1	1	1	1	5	1
26. Safety measures	1	1	1	1	1	5	1
27. Security staff	1	1	1	1	1	5	1
28. First Aids	1	1	1	1	1	5	1
29. Washrooms / toilets	1	1	1	1	1	5	1
30. Prayer room	1	1	1	1	1	5	1
31. Banks / exchange services	1	1	1	1	1	5	1
32. Post office	1	1	1	1	1	5	1
33. Public telephone	1	1	1	1	1	5	1
34. Wi-Fi / internet connection	1	1	1	1	1	5	1
Operational procedures	1	1	1	1	1	5	1
Services / operation between…point to point	1	1	1	1	1	5	1
1. Airplane to arrival hall (Deplane)	1	1	1	0	1	4	0.8
2. Arrival hall to baggage claim	1	1	1	1	1	5	1
3. Baggage claim to public/retails services at terminal	1	1	1	1	1	5	1
4. Terminal gate to ground transport	1	1	1	0	1	4	0.8
5. Ground transport to terminal	1	1	1	0	1	4	0.8
6. Terminal gate to check-in counters	1	1	1	1	1	5	1
7. Check-in counters to security screening	1	1	1	1	1	5	1
8. Security screening to departure hall	1	1	1	1	1	5	1
9. Departure hall to airplane (Enplane)	1	1	1	1	1	5	1

Table E.1 (continued)

Items, Experts, Scores	1	2	3	4	5	Total	Mean
Part C: Suggestions on airport operational attributes and procedures							
Are there any further suggestions for **THIS Airport** to be improved for **passengers** who fly with *domestic low-cost airlines*?	1	1	1	1	1	5	1
Part D: Socio-demographic profiles							
1. Age	1	1	1	1	1	5	1
2. Gender	1	1	1	1	1	5	1
1) Male	1	1	1	1	1	5	1
2) Female	1	1	1	1	1	5	1
3. Country of residence	1	1	1	1	1	5	1
4. Religion	1	1	1	1	1	5	1
1) Brahmanism/Hinduism	1	1	1	1	0	4	0.8
2) Buddhism	1	1	1	1	1	5	1
3) Christianity	1	1	1	1	1	5	1
4) Islamic	1	1	1	1	1	5	1
5) Sikh	1	1	1	1	0	4	0.8
6) Irreligious	1	1	1	1	1	5	1
7) Others	1	1	1	1	1	5	1
5. Education	1	1	1	1	1	5	1
1) Below Bachelor degree	1	1	1	1	1	5	1
2) Bachelor degree	1	1	1	1	1	5	1
3) Above Bachelor degree	1	1	1	1	1	5	1
6. Occupation	1	1	1	1	1	5	1
1) Government / Civil servant	1	1	1	1	1	5	1
2) Business owner	1	1	1	1	1	5	1
3) Private business employee	1	1	1	1	1	5	1
4) Housewife	1	1	1	1	1	5	1
5) Student	1	1	1	1	1	5	1
6) Temporary worker / Freelance	1	1	1	1	1	5	1
7) Retired	1	1	1	1	1	5	1
8) Unemployment	1	1	1	1	1	5	1
9) Others	1	1	1	1	1	5	1
7. Average monthly income	1	1	1	1	1	5	1
Specify 'Currency'	1	1	1	1	1	5	1
8. Marital status	1	1	1	1	1	5	1
1) Single	1	1	1	1	1	5	1
2) Married	1	1	1	1	1	5	1
3) Widowed / Divorce	1	1	1	1	1	5	1
Total	128	135	135	131	129	658	**0.97**

Appendix F

Questionnaire Code Book

Table F.1 Code Book of Questionnaire

V. No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
1.	Q Number	Questionnaire Number	3	0	Code as Questionnaire Number
2.	AirportName	Name of airport	1	0	1. Phuket 2. Hat Yai 3. Chiang Mai 4. Chiang Rai
3.	AirlineName	Name of airline	1	0	1. AirAsia 2. NokAir 3. OrientThai
5.	MainPurpose	Main purpose of the trip	1	0	1. Leisure 2. Education 3. VFR 4. Business 5. MICE 6. Others
6.	TimeVisitProvince	No. time visiting province per year	1	0,9	1. First time in life 2. 1-2 Times / year 3. 3-4 Times / year 4. 5-6 Times / year 5. 7-8 Times / year 6. 9-10 Times / year 7. More than 10 times / year
7.	PersonsGroup7	No. accompanying Persons Group 7	1	0	As given number and then grouped 1. 1 person 2. 2 persons 3. 3 persons 4. 4 persons 5. 5 persons 6. 6 persons 7. ≥ 7 persons

Table F.1 (Continued)

V. No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
8.	T.Arrangements	Travel arrangements	1	0	1. Own arrangement 2. Package
9.	MainReason	Main Reason choosing LCC (ONE)	1	0	1. Price 2. FlightSchedule 3. AirlineRoutes 4. AirportLocation 5. FlightFrequencies 6. AirlineServices 7. BookingSystem 8. Others
10.	TopAirline	Top airline used (ONE)	1	0	1. AirAsia 2. Bangkok Airways 3. HappyAir 4. KanAir 5. NokAir 6. OrientThai 7. ThaiAirways 8. Others
11.	LCCFLightperYearGroup6	LCC Flight per Year (Group 6)	1	0	As given number and then grouped 1. 1-2 /year 2. 3-4 /year 3. 5-6 /year 4. 7-8 /year 5. 9-10/year 6. More than 10 times/year
12.	TimeVisitAirportGroup6	Airport experiences (Group 6)	1	0	As given number and then grouped 1. 2 times 2. 3-4 times 3. 5-6 times 4. 7-8 times 5. 9-10 times 6. More than 10 times

Table F.1 (Continued)

V. No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
13.	TimeLCCThisAirportGroup6	LCC experiences at the airport (Group 6)	1	0	As given number and then grouped 1. 2 times 2. 3-4 times 3. 5-6 times 4. 7-8 times 5. 9-10 times 6. More than 10 times
14.	TimeDepGroup6	Average time used on departure (Group 6)	1	0	As given number and then grouped 1. 30-60 mins 2. 61-90 mins 3. 91-120 mins 4. 121-150 mins 5. 151-180 mins 6. More than 180 mins
15.	TimeArrGroup6	Average time used on arrival (Group 6)	1	0	As given number and then grouped 1. ≤ 30 mins 2. 31-60 mins 3. 61-90 mins 4. 90-120 mins 5. 120-150 mins 6. More than 150 mins
16.	I01.12Accessibility	Importance 01 Accessibility	1	0	1. Strongly unimportant 2. Unimportant 3. Somewhat unimportant 4. Somewhat important 5. important 6. Strongly important [IPT]
17.	I02.13Parking	Importance 02 Parking area	1	0	As IPT-access
18.	I03.14SeatsPublic	Importance 03 Seats in public area	1	0	As IPT-access
19.	I04.15StairLifts	Importance 04 Stair / lifts / escalators within terminal	1	0	As IPT-access
20.	I05.16InfoDesk	Importance 05 Airport information desk	1	0	As IPT-access
21.	I06.17InfoScreen	Importance 06 Flight information screen	1	0	As IPT-access
22.	I07.18Announce	Importance 07 Public announcement	1	0	As IPT-access
23.	I08.19InfoSigns	Importance 08 Information signs within airport	1	0	As IPT-access
24.	I09.20AirportStaff	Importance 09 Airport staff	1	0	As IPT-access
25.	I10.21SecurityScreening	Importance 10 Security screening	1	0	As IPT-access

Table F.1 (Continued)

V. No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
26.	I11.22CheckIn	Importance 11 Check-in system	1	0	As IPT-access
27.	I12.23BaggageCheck	Importance 12 Baggage check-in (departure)	1	0	As IPT-access
28.	I13.24RetailShops	Importance 13 Retail shops	1	0	As IPT-access
29.	I14.25Restaurant	Importance 14 Restaurant / eating facilities	1	0	As IPT-access
30.	I15.26DepartureLounge	Importance 15 Departure lounge	1	0	As IPT-access
31.	I16.27Aerobridge	Importance 16 Aerobridges (terminal-airplane)	1	0	As IPT-access
32.	I17.28PAXStepsBuses	Importance 17 Passenger steps/ airfield buses	1	0	As IPT-access
33.	I18.29ArrivalHall	Importance 18 Arrival hall	1	0	As IPT-access
34.	I19.30BaggageClaim	Importance 19 Baggage claiming system (arrival)	1	0	As IPT-access
35.	I20.31BaggageBelts	Importance 20 Baggage belts (arrival)	1	0	As IPT-access
36.	I21.32BaggageDrop	Importance 21 Baggage drop service	1	0	As IPT-access
37.	I22.33Trolley	Importance 22 Baggage carts / trolley	1	0	As IPT-access
38.	I23.34TourHotelCounters	Importance 23 Tour / hotel counters	1	0	As IPT-access
39.	I24.35CarRentalFacil	Importance 24 Car rental facilities	1	0	As IPT-access
40.	I25.36SafetyMeasures	Importance 25 Safety measures	1	0	As IPT-access
41.	I26.37SecurityStaff	Importance 26 Security staff	1	0	As IPT-access
42.	I27.38FirstAids	Importance 27 First Aids	1	0	As IPT-access
43.	I28.39Toilets	Importance 28 Washrooms / toilets	1	0	As IPT-access
44.	I29.40PrayerRoom	Importance 29 Prayer room	1	0	As IPT-access
45.	I30.41BanksExchange	Importance 30 Banks / exchange services	1	0	As IPT-access
46.	I31.42PostOffice	Importance 31 Post office	1	0	As IPT-access
47.	I32.43PublcTelephone	Importance 32 Public telephone	1	0	As IPT-access
48.	I33.44WiFi	Importance 33 Wi-Fi / internet connection			
49.	I34.45PlaneToArrivalHall	Importance 34 operation between Airplane to arrival hall	1	0	As IPT-access
50.	I35.46ArrivalHallToBaggage	Importance 35 operation between Arrival hall to baggage claim	1	0	As IPT-access
51.	I36.47BaggagToPublicService	Importance 36 operation between Baggage claim to public/retails services at terminal	1	0	As IPT-access
52.	I37.48TerminalToGround	Importance 37 operation between Terminal gate to ground transport	1	0	As IPT-access
53.	I38.49GroundToTerminal	Importance 38 operation between Ground transport to terminal	1	0	As IPT-access
54.	I39.50TerminalToCheckIn	Importance 39 operation between Terminal gate to check-in counters	1	0	As IPT-access
55.	I40.51CheckInToSecurity	Importance 40 operation between Check-in counters to security screening	1	0	As IPT-access
56.	I41.52SecurityToDepartHall	Importance 41 operation between Security screening to departure hall	1	0	As IPT-access

Table F.1 (Continued)

V. No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
57.	I42.53DepartHallToAirplane	Importance 42 operation between Departure hall to airplane	1	0	As IPT-access
58.	E01.12Accessibility	Efficiency 01 Accessibility	1	0	(0=No experience) 1. Strongly inefficient 2. Inefficient 3. Somewhat inefficient 4. Somewhat efficient 5. Efficient 6. Strongly efficient (EFF)
59.	E02.13Parking	Efficiency 02 Parking area	1	0	As EFF-access
60.	E03.14SeatPublic	Efficiency 03 Seats in public area	1	0	As EFF-access
61.	E04.15StairsLifts	Efficiency 04 Stair / lifts / escalators within terminal	1	0	As EFF-access
62.	E05.16InfoDesk	Efficiency 05 Airport information desk	1	0	As EFF-access
63.	E06.17InfoScreen	Efficiency 06 Flight information screen	1	0	As EFF-access
64.	E07.18Announce	Efficiency 07 Public announcement	1	0	As EFF-access
65.	E08.19InfoSigns	Efficiency 08 Information signs within airport	1	0	As EFF-access
66.	E09.20AirportStaff	Efficiency 09 Airport staff	1	0	As EFF-access
67.	E10.21SecurityScreening	Efficiency 10 Security screening	1	0	As EFF-access
68.	E11.22CheckIn	Efficiency 11 Check-in system	1	0	As EFF-access
69.	E12.23BaggageCheck	Efficiency 12 Baggage check-in (departure)	1	0	As EFF-access
70.	E13.24RetailShops	Efficiency 13 Retail shops	1	0	As EFF-access
71.	E14.25Restaurants	Efficiency 14 Restaurant / eating facilities	1	0	As EFF-access
72.	E15.26DepartureLounge	Efficiency 15 Departure lounge	1	0	As EFF-access
73.	E16.27Aerobridges	Efficiency 16 Aerobridges (terminal-airplane)	1	0	As EFF-access
74.	E17.28PAXStepsBuses	Efficiency 17 Pax Steps / Buses (airplane-terminal)	1	0	As EFF-access
75.	E18.29ArrivalHall	Efficiency 18 Arrival hall	1	0	As EFF-access
76.	E19.30BaggageClaim	Efficiency 19 Baggage claiming system (arrival)	1	0	As EFF-access
77.	E20.31BaggageBelts	Efficiency 20 Baggage belts (arrival)	1	0	As EFF-access
78.	E21.32BaggageDrop	Efficiency 21 Baggage drop service	1	0	As EFF-access
79.	E22.33Trolley	Efficiency 22 Baggage carts / trolley	1	0	As EFF-access
80.	E23.34TourHotelCounters	Efficiency 23 Tour / hotel counters or travel agency	1	0	As EFF-access
81.	P24.35CarRentalFacil	Efficiency 24 Car rental facilities	1	0	As EFF-access
82.	P25.36SafetyMeasures	Efficiency 25 Safety measures	1	0	As EFF-access
83.	E26.37SecurityStaff	Efficiency 26 Security staff	1	0	As EFF-access
84.	E27.38FirstAids	Efficiency 27 First Aids	1	0	As EFF-access
85.	E28.39Toilets	Efficiency 28 Washrooms / toilets	1	0	As EFF-access

Table F.1 (Continued)

V. No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
86.	E29.40PrayerRoom	Efficiency 29 Prayer room	1	0	As EFF-access
87.	E30.41BanksExchange	Efficiency 30 Banks / exchange services	1	0	As EFF-access
88.	E31.42PostOffice	Efficiency 31 Post office	1	0	As EFF-access
89.	E32.43PubliceTelephone	Efficiency 32 Public telephone	1	0	As EFF-access
90.	E33.44WiFi	Efficiency 33 Wi-Fi / internet connection	1	0	As EFF-access
91.	E34.45AirplaneToArrivalHall	Efficiency 34 operation between Airplane to arrival hall	1	0	As EFF-access
92.	E35.46ArrivalHallToBaggage	Efficiency 35 operation between Arrival hall to baggage claim	1	0	As EFF-access
93.	E36.47BaggageToPublicService	Efficiency 36 operation between Baggage claim to public/retails services at terminal	1	0	As EFF-access
94.	E37.48TerminalToGround	Efficiency 37 operation between Terminal gate to ground transport	1	0	As EFF-access
95.	E38.49GroundToTerminal	Efficiency 38 operation between Ground transport to terminal	1	0	As EFF-access
96.	E39.50TerminalToCheckIn	Efficiency 39 operation between Terminal gate to check-in counters	1	0	As EFF-access
97.	E40.51CheckInToSecurity	Efficiency 40 operation between Check-in counters to security screening	1	0	As EFF-access
98.	E41.52SecurityToDepartureHall	Efficiency 41 operation between Security screening to departure hall	1	0	As EFF-access
99.	E42.53DepartureHallToAirPlane	Efficiency 42 operation between Departure hall to airplane	1	0	As EFF-access

Table F.1 (Continued)

No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
100.	WhatElse1	Suggestions for airports	2	0	As given and then coded 1. Departure lounge 2. Free wi-fi 3. Area for children 4. Free drinking water / station 5. Check-in counter (numbers, location) 6. Info screen / Info signs 7. Expensive food & goods 8. Car parking lots 9. Handicap 10. Safety 11. Tour & hotel information 12. Membership 13. Varieties of shops & restaurants 14. Overnight place 15. Check through baggage 16. Waiting area 17. Scales for baggage before check-in 18. High price taxi service 19. Ground transport (airport-town) 20. English Newspaper / Magazine 21. Announcement (different language) 22. Halal food 23. Prayer room 24. Handling group passengers 25. Emergency plan 26. Cold air-condition 27. Restroom 28. English speaking staff 29. Staff service 30. Smoking area 31. Terminal renovation 32. Battery charging area

Table F.1 (Continued)

No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
101.	Age	Age Group (6)	1	0	As given number and then grouped 1. 11-20 years 2. 21-30 years 3. 31-40 years 4. 41-50 years 5. 51-60 years 6. 61-70 years
102.	Gender	Gender	1	0	1. Male 2. Female
103.	CountryOrigin	Country / Residence	2	0	1. ASEAN 2. East Asia 3. South Asia 4. Europe 5. America 6. Africa 7. Oceania 8. Middle East 9. Bangkok, TH 10. Central, TH 11. West, TH 12. East, TH 13. North, TH 14. Northeast, TH 15. South, TH
104.	Nationality	Nationality (two groups)	1	0	1. Thai 2. Foreigners
105.	MaritalStatus	Marital status	1	0	1. Single 2. Married 3. Widow/Divorce
106.	Religion	Religion	1	0	1. Brahmanism/Hinduism 2. Buddhism 3. Christianity 4. Islamic 5. Sikh 6. Irreligious 7. Others

Table F.1 (Continued)

No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
107.	Education	Education	1	0	1. Below bachelor degree 2. Bachelor degree 3. Above bachelor degree 4. Others
108.	Occupation	Occupation	1	0	1. Civil servant 2. Business owner 3. Private business employee 4. Housewife 5. Student 6. Temporary worker / freelance 7. Retired 8. Unemployed 9. Others
109.	Income	Income (Group 6)	1	0	As given number and then group [min 8,700 – 2,839,645 max] 1. ≤ 20000 Baht 2. 20001-40000 Baht 3. 40001-60000 Baht 4. 60001-80000 Baht 5. 80001-100000 Baht 6. ≥ 100001 Baht
110.	NEWAirportPlusAirline	NEW variable: Airport & Airline	2	0	11 HKT-FD 12 HKT-DD 13 HKT-OX 21 HDY-FD 22 HDY-DD 31 CNX-FD 32 CNX-DD 41 CEI-FD 42 CEI-DD
111.	NEWAirlineaPlusNationality	NEW variable: Airline & Nationality	2	0	11 AirAsia>ThaiPassengers 12 AirAsia>ForeignPassengers 21 NokAir>ThaiPassengers 22 NokAir>ForeignPassengers 31 OrientThai>ThaiPassengers 32 OrientThai>ForeignPassengers

Table F.1 (Continued)

No.	Variable Name	Variable Label	Variable Length	Missing Value	Value Label
112.	NEWTotalIMPORTANCE33V	Average Total Importance 33V. (I01-I33)			
113.	NEWTotalIMPORTANCE9V	Average Total Importance 9V. (I01-I33)			
114.	NEWTotalIMPORTANCEArrival4V	Average Total Importance Arrival 4V. (I34-I37)			
115.	NEWTotalIMPORTANCEDeparture5V	Average Total Importance Departure 5V. (I38-I42)			
116.	NEWTotalEFFICIENCY33V	Average Total Efficiency 33V. (E01-E33)			
117.	NEWTotalEFFICIENCY9V	Average Total Efficiency 9V. (E34-E42)			
118.	NEWTotalEFFICIENCYArrival4V	Average Total Efficiency 4V. Arrival (E34-E37)			
119.	NEWTotalEFFICIENCYDeparture5V	Average Total Efficiency Departure 5V. (E38-E42)			

Appendix G

On-Site Photos

Figure G.1 Photos of Questionnaire Survey and Passengers' Interviews

Figure G.2 Photos of LCC Staff and Airport Executives' Interviews

BIOGRAPHY

NAME	Miss Sukhuman Klamsaengsai
ACADEMIC BACKGROUND	Master of Business Administration (Hospitality and Tourism Management) Prince of Songkhla University, 2006
	Bachelor of Business Administration (Tourism Management) First Class Honors Walailak University, 2004
PRESENT POSITION	Lecturer, Tourism and Hospitality Industry Program School of Management Walailak University Nakhon Si Thammarat Province, Thailand