



# Service quality improvement of ground staff at Don Mueang International Airport

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## ABSTRACT

The purposes of this research were to: 1) evaluate the service quality of the ground staff at Don Mueang International Airport (DMK), 2) compare the ground staff quality service perception of Thai passengers at DMK, and 3) provide guidelines for service quality improvement of the DMK airlines ground staff. A sample size of 400 Thai domestic passengers was accidentally selected at DMK. A questionnaire was used as a research tool for data collection. Five dimensions of service quality were evaluated: reliability, responsiveness, assurance, empathy, and tangibles. It was found that the service quality of ground staff was moderate. The highest dimension of service quality realization was tangibles, followed successively by reliability, assurance, empathy, and responsiveness. The passengers' perception of the ground staff's service quality varied by gender and age group. Guidelines were proposed for the improvement of ground staff service quality at DMK based on the findings.

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## Introduction

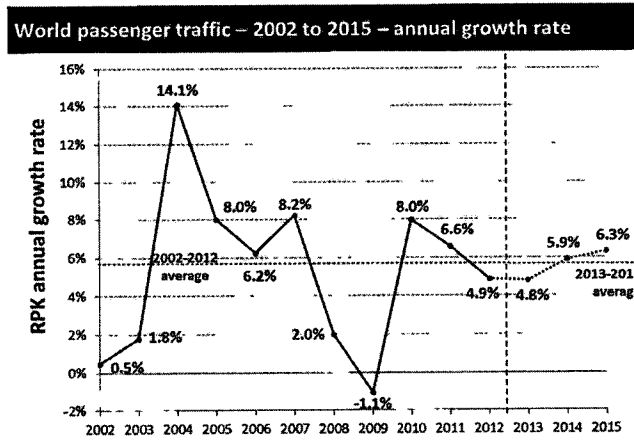
The World Wide Web has changed the global dynamic of air transport by rapidly developing advanced technology to facilitate traveling and increasing the expectation for service quality and the demand for passenger air-travel. In addition to providing a public utility service, air transport has played a significant role in national economic development. It provides more business-to-businesses in the supply chain industries such as restaurants, tourism, hospitality, and travel agents. The International Civil Aviation Organization (2013) forecasts that air transport of world-wide passengers will continually increase by 4.8, 5.9, and 6.3 percent in 2013, 2014, and 2015, respectively, as depicted in Figure 1.

Data from the International Air Transportation Association (IATA) show that the demand for international air transport of world passengers between 2013 and 2017, expressed as revenue passenger kilometers, will expand at an average growth rate of 5.4 percent per annum. This is in line with the World Tourism Organization's 2014 forecast, which predicted that the number of passengers traveling internationally in Asia and the Pacific will increase by 5–6 percent (The United Nations World Tourism Organization Asia-Pacific [UNWTO Asia Pacific], 2013, p. 11), whereas Airport Council International (ACT) expected that the growth rate of world passengers in the next 20 years (2008–2027) will increase on average by 4.2 percent per annum, and the growth rate in Asia-Pacific passengers at 6.3 percent is the highest compared to other regions of the world (Thai Airways International Public Company Limited, 2012, p. 61).

In Thailand, according to Table 1, DMK, which serves low-cost airlines (LCAs) and/or domestic and international point-to-point routes (Bureau of Policy and Strategy, Office

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**Figure 1** Forecast air transport passenger traffic between 2013 and 2015  
**Source:** International Civil Aviation Organization (2013).

**Table 1**  
 Increased volume of flights and passengers at six airports in Thailand

Airport	Aircraft movement (Flights)		Number of passengers	
	2012	2013	2012	2013
Suvarnabhumi	326,970	288,004	52,368,712	50,900,697
Don Mueang	37,141	135,988	2,717,413	15,562,753
Chiang Mai	35,571	41,295	4,334,608	5,172,742
Hat Yai	14,573	17,056	2,013,243	2,465,370
Phuket	59,406	70,198	9,161,005	10,979,537
Mae Fah Luang	6,674	6,882	926,323	1,053,863
Total	480,335	559,423	71,521,304	86,134,962

**Source:** Airports of Thailand PLC. (2013, p. 89)

of the Permanent Secretary, Ministry of Transport, 2013, p. 26), experienced substantial increases in the volume of aircraft movements and passengers. This demonstrated a change in demand and modes of air transport, revealing that more passengers chose LCA services.

Currently, LCAs play an important role as competitors to full-service airlines as well as among themselves. The pricing strategy is a key factor in competition. However, service strategy was extremely important and numerous studies and research have shown that price competition is negative in the long term for LCAs (Chang & Yeh, 2002, pp. 166–177). Passengers still expect impressive service quality. According to the Travel Consumer Report issued in February 2014 (Table 2), the U.S. Department of Transportation, statistics showed that both full-service airlines and low-cost airlines received customer service complaints. Thus, passengers traveling with LCAs were not only impressed with the cheaper air fare, but they also wanted good service quality from the airline staff.

Service quality is an important achievement indicator. Airline business organizations set strategies and develop service quality to win the kudos for its organization of being at the top level and globally recognized. They use service excellence as a main organizational strategy to inspire and assure the passengers that their service quality is excellent. In addition, it establishes satisfaction, reliability, distinction, organization image, and loyalty of

**Table 2**  
 Top three passenger complaints about U.S. airlines between January and December 2013

U.S. airline	Flight problems	Customer service	Baggage
Air Wisconsin	30	10	0
Airtran Airways	47	22	18
Alaska Airlines	22	17	13
Allegiant Air	139	57	21
American Airlines	485	275	358
American Eagle Airlines	180	34	34
Chautauqua Airlines	30	3	4
Commut Air	36	0	4
Compass Airlines	11	3	3
Delta Air Lines	178	137	79
Endeavor Airlines	75	9	20
Express jet Airlines	251	22	36
Frontier Airlines	75	42	33
Go!	45	3	3
Gojet Airlines	36	7	7
Great Lakes Aviation	24	1	1
Hawaiian Airlines	15	20	11
Horizon Airlines	9	2	3
Island Airlines	7	1	0
Jetblue Airways	47	28	48
Mesa Airlines	52	9	1
Piedmont Airlines	44	6	2
PSA Airlines	24	3	2
Republic Airlines	116	11	9
Shuttle America	44	6	6
Silver Airways	17	3	14
Skywest Airlines	142	18	30
Southwest Airlines	104	76	70
Spirit Airlines	318	109	148
Sun Country Airlines	3	2	4
Trans States Airlines	19	1	5
United Airlines	521	337	287
US Airways	277	99	75
Virgin America	19	15	17
Other U.S. airlines	21	8	6
Total Jan–Dec 2013	3,473	1,396	1,372

**Source:** U.S. Department of Transportation (2014)

passengers or new customers who are interested in using their service (Heskett, Sasser, & Schlesinger, 1997, p. 75).

Under the new global dynamic, airline businesses have changed and now focus on gaining a competitive advantage

by being a world-class organization. Reputation and strategy have become very important to an airline business' success. Although air transportation is very popular among passengers, the airline business is sensitive to the outside because of economic, political, and social factors. For example, the energy crisis, natural disasters, and epidemics have caused cost control problems, which have resulted in more serious competition over airline business' prices. All of the above-mentioned factors are noteworthy for passengers deciding to travel and are obstacles that absolutely affect airline business operations. To survive in this business, worldwide airline business organizations, including those in Thailand, need to create mechanisms and change their operations and human resources management to be stronger and more flexible and adjustable. In addition, they need to be ready to serve and create new innovative business practices that distinguish their value and service qualities from those of their competitors. Therefore, research on service quality improvement of the ground staff at DMK is integral to developing successful airline business organizations in Thailand.

## Literature Review

Providing service quality to passengers while understanding the passengers' requirements has been very important in increasing airline business survival and success (Chen & Chang, 2005, pp. 79–87). Currently, focusing on satisfaction and passenger loyalty leads to better airline service quality. Airlines also more explicitly and concretely present their service quality so that passengers can use this basic information in making a decision when selecting a service (Tolpa, 2012, p. 33). Pakdil and Aydin (2007, pp. 229–237) state that service quality can be measured by employees, tangibles, responsiveness, reliability and assurance, image, and empathy. Furthermore, Babbar and Koufteros (2008, pp. 804–830) considered that the most visible service to the customer is the service that contact staff provide. The level of concern and civility between service staff and passengers is important; for example, listening and understanding, individual attention, friendliness, and courtesy.

Researchers and scholars have developed a number of measurement tools. The well-known instrument in service quality measurement is the SERVQUAL model (Parasuraman, Berry, & Zeithaml, 1985, p. 46). In this model, service quality results are derived by comparing consumer perceptions and expectations with evaluating service quality based on the following five main categories:

1. Reliability—the ability to perform the promised service dependably and accurately. The service is performed correctly on the first occasion, records are up to date, and schedules are kept. Reliable service effectiveness is the customers' expectation that the service must be completed punctually and usually without any mistakes in all flights.
2. Responsiveness—the willingness to help customers and to provide prompt service.
3. Assurance—the knowledge and courtesy of employees and their ability to convey trust and confidence, the promise to passengers, politeness and respect, effective

communication, and the neat appearance of the service provider.

4. Empathy—the provision of care as well as individualized attention to customers that includes approaching customers speedily and making an effort to understand the customer's individual needs.
5. Tangibles—the appearance of the physical facilities, tools, and equipment used to provide the service; the appearance of personnel and communication materials, including cleanliness, and disturbance from other customers.

## Methods

### Extent of Study

The study was limited to Thai individuals traveling on domestic flights and their experience at the check-in counter, boarding gate, and baggage claim area at DMK.

### Participants

1. The research population was composed of 15,562,753 Thai passengers traveling on domestic flights from DMK (Airports of Thailand PLC., 2013, p. 89).
2. Using random sampling, the researcher collected data from passengers traveling on domestic flights from DMK. Accidental sampling was used. The researcher determined population attributes to screen appropriate participants starting with an unspecific selection questionnaire. Then, the samples were screened using the following criteria:
  - 1) must be a passenger traveling on domestic flights from DMK and
  - 2) must be Thai.
3. Size of sample group was number of qualified participants. The sample size was derived from sample determination using the Taro Yamane calculation formula with sampling error at the 95 percent confidential level ( $p \leq .05$ ) and consisted of a sample size of 400 participants.

Quantitative research was used to evaluate the quality of ground staff services. The researcher separated the questionnaire into two sets. Respondents had to reply to the first questionnaire and then do the second one. These questionnaires were applied from Fitzsimmons and Fitzsimmons (2011), focusing on the five core dimensions of service quality evaluation: reliability, responsiveness, assurance, empathy, and tangibles. The researcher then created six sub factors for each category to fit the ground staff service context. The contents of the two questionnaires are as follows.

The first questionnaire selected qualified participants for researching "Service Quality Improvement of Ground Staff at Don Mueang International Airport" to determine the qualified participants for data collection, according to a random sample process.

The second questionnaire researched the quality of ground staff services at DMK, asking for the opinions of passengers who traveled on domestic flights. The researcher separated the questionnaire into two parts:

Part 1 was a questionnaire on demographic attribute of respondents.

Part 2 was a questionnaire on service quality evaluation of ground staff for domestic flights. The questions were split into two parts consisting of a passenger's expectation before taking a service and then service perception after taking the service. Each was separated into three staff duties: check-in staff, boarding gate staff, and baggage service staff. Each had 20 questions (both expectation before taking service and service perception after taking service). There were 60 questions in total. Questions on each duty consisted of five main dimensions according to service quality measurement theory (Fitzsimmons & Fitzsimmons, 2011, pp. 116–117): 1) reliability, 2) responsiveness, 3) assurance, 4) empathy, and 5) tangibles.

The reliability of the questionnaires was tested by using Cronbach's alpha coefficient. It was found that the reliability of questionnaires before using service was at a level of .970 and of service perception after using service was at a level of .955.

#### Data Collection

Data were collected from passengers who had received services provided by airlines at DMK. The researcher applied a quantitative research approach using survey and data collection from passengers who had services provided by airlines at DMK. Research methodologies included random planning, determination of sample size, sample selection, and typical survey method according to statistical principle as described below.

This research collected data from two sources:

1. Primary data were derived from the above-mentioned random sample process for 400 participants. Then, the researcher verified the completion and correctness of all returned questionnaires. All questionnaires were found to be complete.
2. Secondary data were derived from research documents such as books, textbooks, theses, independent studies, and academic papers to make this study more complete.

#### Data Analysis

The researcher used statistical analysis to quantify the results of service quality evaluation of ground staff at DMK. After compiling questionnaires, the researcher used the following:

1. Descriptive statistics (frequency and percentage) were used to analyze the demographic attributes of respondents and presented in table format.
2. Mean and standard deviation were used to analyze service quality evaluation of ground staff at DMK and presented in table format.
3. A *t* test and *F* test (one-way ANOVA) were used to compare differences in service perception of ground staff at DMK.

## Results

### Respondents' Profile

It was found that two-fifths of respondents (241 of 400) were female (60.2%), nearly one-third of respondents were aged 31–40 years (30.3%), 193 respondents had graduated with a bachelor's degree (48.3%), 129 respondents were government officials/state enterprise employees (32.3%), and 210 respondents had an average income per month of THB 30,001 or more (52.5%). The reasons for travel included traveling/tour/relaxation, which consisted of 177 respondents (44.3%), while 204 respondents traveled 1–5 times per year (51%), as shown in Table 3.

### Service Quality Perceptions of Respondents

The first dimension of service quality perception was tangibles and the inferior dimensions were reliability, assurance, empathy, and responsiveness. The service quality perceptions were ranked in five levels as shown in Table 4:

**Table 3**  
Respondents' profile

Parameter	Total (%)
(n = 400)	
<b>Gender</b>	
Male	159 (39.8)
Female	241 (60.2)
<b>Age (years)</b>	
15–20	33 (8.2)
21–30	100 (25.0)
31–40	121 (30.3)
41–50	80 (20.0)
51 or older	66 (16.5)
<b>Education level</b>	
Primary school	8 (2.00)
High school/Secondary school	82 (20.5)
Bachelor degree	193 (48.3)
Higher than bachelor degree	117 (29.2)
<b>Occupation</b>	
Student	44 (11.0)
Farming	7 (1.6)
Business owner	116 (29.1)
Office employee	104 (26.0)
Government official/State enterprise employee	129 (32.3)
<b>Average income per month (THB)</b>	
Less than or equal 10,000	33 (8.1)
10,001–15,000	24 (6.0)
15,001–20,000	59 (14.8)
20,001–25,000	39 (9.8)
25,001–30,000	35 (8.8)
More than 30,000	210 (52.5)
<b>Reason for travel</b>	
Traveling/Tour/Relax	177 (44.3)
Work/Business	157 (39.3)
Back to hometown	66 (16.4)
<b>Frequency of traveling</b>	
First time	53 (13.2)
1–5 times per year	204 (51.0)
6–10 times per year	48 (12.0)
More than 10 times per year	95 (23.8)

**Table 4**  
Service quality perceptions

Service quality perception	N	Min	Max	Mean	S.D.
Well-groomed boarding gate staff	400	0	2	0.97	0.427
Check-in staff appropriately attired	400	0	2	0.97	0.433
Check-in staff had equipment available to provide check-in service.	400	0	2	0.90	0.494
Boarding gate staff checked documents with flights correctly	400	0	2	0.90	0.454
Baggage service staff appropriately attired	400	0	2	0.89	0.482

The first rank was passengers' perception of quality of ground staff service at DMK, such as well-groomed boarding gate staff.

The second rank was passengers' perception of quality of ground staff service at DMK, such as check-in staff were appropriately attired.

The third rank was passengers' perception of quality of ground staff service at DMK, such as check-in staff had equipment available to provide check-in service.

The fourth rank was passengers' perception of quality of ground staff service at DMK, such as boarding gate staff checked documents with flights correctly.

The fifth rank was passengers' perception of quality of ground staff service at DMK, such as baggage service staff were appropriately attired.

Overall passengers' perceptions of the quality of ground staff service at DMK had a service quality perception equal to expectation. This showed that the quality of ground staff service at DMK was moderate. However, when considering each dimension, responsiveness and empathy of the ground staff at DMK regarding baggage service staff had an average value lower than expected, as shown in Table 5. This showed that the service quality of ground staff at DMK carry out this duty was low. It can be separated as detailed below:

1. Baggage service staff stood at the baggage carousel and were available to provide service.

**Table 5**  
Service quality perceptions lower than expectation

Service quality perception	N	Min	Max	Mean	S.D.
Baggage service staff stood at the baggage carousel and were available to service	400	0	2	0.63	0.613
Baggage service staff had empathy while waiting for baggage	400	0	2	0.64	0.607
Baggage service staff greeted passengers when they reached at the baggage carousel	400	0	2	0.65	0.612
Baggage service staff were enthusiastic to service while waiting for baggage	400	0	2	0.65	0.602

2. Baggage service staff had empathy while waiting for baggage.
3. Baggage service staff greeted passengers when they reached the baggage carousel.
4. Baggage service staff were enthusiastic to service while waiting for baggage.

### Hypothesis Testing

Passengers traveling on domestic flights at DMK who had different demographic attributes had different levels of perception of the service quality of ground staff.

The differences in passengers' perception of the quality of ground staff service at DMK overall and for each dimension classified by demographic attributes varied by gender ( $p < .05$ ). Male participants' perception of the quality of ground staff service was better than that of female participants, as shown in Table 6.

The differences in the level of passengers' perceptions of quality of ground staff service at DMK overall and for each dimension classified by demographic attributes varied by age. Different ages had significantly different perceptions of service quality of ground staff ( $p < .05$ ), as shown in Table 7.

The data analysis shown in Table 8 indicates that the perception of the quality of ground staff service significantly differed by age group ( $p < .05$ ). Passengers aged 21–30 years, 51 years or older, and 15–20 years had a different perception of the quality of ground staff service in comparison to passengers aged 31–40 years.

### Hypothesis Testing

The gender and age of those traveling on domestic flights from DMK affected their perception of quality of ground staff service. The other factors had no effect on perception of quality of ground staff service at DMK.

## Discussion

Service quality measurement is challenging for researchers and executives because of its unique characteristics, which make it different from measuring the quality of products that can be noticed or touched and appraised before buying or consuming. However, service quality

**Table 6**  
Gender differences in passengers' perception of service quality of ground staff

Dimension of quality of ground staff service at DMK	Level of perception of service quality				t	p
	Male n = 159		Female n = 241			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
1. Reliability	0.82	0.336	0.73	0.352	3.093	.013*
2. Responsiveness	0.69	0.441	0.58	0.436	2.484	.025*
3. Assurance	0.90	0.389	0.73	0.420	3.264	.001*
4. Empathy	0.80	0.442	0.66	0.456	3.544	.002*
5. Tangibles	0.96	0.321	0.84	0.339	2.767	.008*
	0.83	0.386	0.71	0.401	3.376	.004*

\* $p < .05$

**Table 7**  
Age difference of passengers' perception in quality of ground staff service

Age (years)	Mean	SD	F	Sig.
15–20	0.89	0.291	2.367	.045*
21–30	0.84	0.382		
31–40	0.71	0.360		
41–50	0.74	0.352		
51 or older	0.85	0.372		

\* $p < .05$

**Table 8**  
Comparison by different age groups of passengers

Age (years)	Rank	Mean	1	2	3	4	5
15–20	1	0.89	–	0.04	0.05	0.14	0.18*
51 or older	2	0.85	–	–	0.01	0.11	0.14*
21–30	3	0.84	–	–	–	0.10	0.13*
41–50	4	0.74	–	–	–	–	0.03
31–40	5	0.71	–	–	–	–	–

\* $p < .05$

measurement is intangible because a service is the process of producing and consuming at the same time. In addition, service quality cannot be evaluated from the outcomes of service process only (Johnson, Tsiors, & Lancioni, 1995, pp. 6–19), but can also be considered using processes of service production such as training and education for employees or interaction with customers. Although the overall average of perception of service quality obtained from this research met the expectations of passengers, the service quality of ground staff at DMK was moderate and the passengers were not impressed.

The hypothesis testing of some demographic attributes, such as gender, demonstrated that male participants had a better perception of the service quality of ground staff than female participants. Additionally, passengers with different ages had different perceptions of the quality of ground staff service; passengers aged 21–30 years, 51 years or older, and 15–20 years had a better perception of the service quality of ground staff than passengers aged 31–40 years.

Moreover, according to the research, airline service quality has an influence on service differentiation (Prayang, 2007, pp. 492–514). If low-cost airline passengers do not feel the service quality is similar or equal to other airlines, be they full-service airlines and/or other low-cost airlines, even with lower prices, they are ready to switch over to competitor airlines at any time (Kim, Kim, & Lee, 2011, p. 1044). Therefore, guidelines to improve service quality of ground staff at DMK can be recommended as follows:

1) In an effort to make an airline business organization a successful service provider, service vision is an important factor for a business in Thailand to become a leader in service provision. Service is a part of an organization's future. If the service quality is higher than expected, it pushes the organization to be a business leader and to develop into a global organization. The results of this study revealed that gender and age differences of those traveling on domestic flights from DMK affected the perception of service quality of ground staff. Therefore, the airline business organization should pay attention to

passengers' demographic attributes. Moreover, service quality also affects the profit of an organization (Rust & Zahorik, 1993, pp. 193–215). Excellent service quality will satisfy passengers and help maintain old customers (Reichheld & Sasser, 1990, p. 105), which makes the organization more capable of competing and provides the organization with a greater market segment (Park, Robertson, & Wu, 2006, p. 363).

- 2) Airline business organizations must possess high standards. This means excellent service alone is not enough to be distinguished from other airline business organizations or competitors. To be leader in service, a business must pay attention to the details and see the opportunity disregarded by their competitors (Parasuraman, Berry, & Zeithaml, 1991, pp. 39–48). Airline business organizations should apply the five key dimensions that customers use to consider service quality to determine work standards for ground staff. Furthermore, the organization should pay attention and improve service standards, especially considering the low standard of baggage service staff at the baggage carousel, for example, availability, empathy and enthusiasm while waiting for baggage, and greeting passengers at the baggage carousel.
- 3) Airline business organizations should focus on human capital management and improvement and organizational development at the same time. All worldwide airline business organizations have their own capital items such as aircraft, premises, computers and technology to facilitate passengers, but the "human capital" makes them different. Human capital consists of intellectual capital, social capital, and emotional capital (Gratton & Ghoshal, 2003, pp. 1–10), which exist in all employees, and should be used for effective and efficient service, especially regarding employees providing service that requires contact with passengers. Human capital can help an airline business distinguish itself from competitors. Therefore, airline businesses must pay attention and develop their human capital to be ready to service passengers professionally, and focus on their employees having the five attributes mentioned below:
  1. The organization should train employees to be reliable, punctual and careful at work.
  2. The organization should encourage employees to be willing to help other people and be ready to respond to users' needs at all times.
  3. The organization should train employees to seek knowledge, be educated and courteous, be polite, be ready to serve, and to communicate effectively.
  4. The organization should increase staff awareness in order to make employees more active, enthusiastic, and understanding of passengers' requirements.
  5. The organization should encourage employees to be appropriately attired.

## Conclusion

This research explored the quality of ground staff service at DMK. Service quality cannot be evaluated from the outcomes of a service process alone but must also consider

the process of service production, such as training and education of employees or their interaction with customers. Service quality measurements that consider all aspects of the service production process are important to truly perceive service quality. The researcher suggests developing the service quality of staff at every service touch point, and an airline business organization should also emphasize their passengers' expectation in all aforementioned dimensions. Airline business organizations can apply the results of this research to improve their organizations by applying the results as a strategy or policy for employees to increase their service quality so that it becomes a part of an organization's goals or vision. Furthermore, the questionnaire in this research can be applied to measure or evaluate staff performance to improve service quality of Thailand's airline business organizations.

### Conflict of interest

No conflict of interest.

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