Original Research Article

Service Quality and Customer Satisfaction on Budget Airlines: Kano model approach

Abstract

Although low-cost carrier (LCC) airlines do not provide significant service to customer, the demand and market share of LCC is constantly increasing. Services provided by LCC and the quality of their service become a competitive advantage of LCC airlines. The purpose of this research is to identify the factors that are 'must-be' dimension after being categorized into five attributes described by using Kano Model. 260 responses were collected. The questionnaires include questions about the services factors in the SERVQUAL service model, basic demographic variables and respondents who are taken or not taken Hong Kong Express before as Hong Kong Express is classified as one significant player of LCC airlines in Hong Kong. The result can give insights to Hong Kong Express to identify the service areas that needed to be improved and paid attention to increase customers' satisfaction in the future.

Keywords: Kano model, service quality, customer satisfaction, airlines

1. Introduction

The market share of low-cost carrier (LCC) is constantly improving recently. Hong Kong Express Airways Limited (HK Express) carried 313,100 passengers in June 2017, which increases 36.01% for whole year. In the past 12 months, 32,676 million passengers were carried by HK Express, compared with the same period of last year it has an increase of 21.65% (Wenweipo, 2017). Service quality is a main antecedent of customer satisfaction (Cronin and Taylor, 1992; Anderson and Sullivan, 1993; Brady *et al.* 2002). HK Express cannot neglect, it relates to how HK Express can constantly retain customers. Company failed to meet customer expectation, generated customer dissatisfied and eventually leaded to a loss of revenue (Zeithaml and Bitner, 2017). Other studies mentioned that customer was satisfied if expectations coincided with actual received outcome (or the result exceeds expectations), or dissatisfied if not (Szwarc, 2005). However, 18 regular flights cancellation of HK Express caused travel headaches for thousands of Hong Kong people in September 2017, which brought customer dissatisfaction and leaded to negative word-of-mouth of HK Express. By observing 52 reviews from Skytrax (2017), airline reviews and rating websites. Customers claimed their flights were cancelled, services were incompetent and irresponsible, therefore, HK Express would not be recommended. Shahin and Zairi (2009) stated that Kano model could benefit on investigating customer requirement prioritization, to avoid dissatisfaction, it is necessary to discover what the must-be factors for HK Express are.

2. Literature Review

2.1 Service quality

Definition of service quality was that a consumer's overall impression of the company services and its efficiency (Park *et al.*, 2004), or "as a chain of services in which the entire service delivery is divided into a series of processes" (Chen and Chang, 2005). Service quality was the interaction between customers and airlines, which influenced customers' perceptions and their images (Gursoy *et al.*, 2005). Price was increasingly used to be priority method attracting customers, some airlines still try to obtain competitive advantage by improving service quality to be distinguished (Jones and Sasser, 1995) and gained an edge at the customer perception (Chang and Yeh, 2002).

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2.2 Customer satisfaction

Nowadays interpretations proposed satisfaction as customer fulfillment response (David, 2013), which was one of the most crucial objectives for company aimed to has a long-term relationship with customers (Vu and Huan, 2016). There were many factors individuals would take in consideration before purchasing one air-ticket, as well as driving their expected perceived performance from airlines. And customer satisfaction was considered as an industrial standard performance and possible measurement criterion of excellence for company (Gerson, 1993). Therefore, providing desirable service for customers was important for airlines to achieve its goals (Gerson, 1993) and survived in the competition.

2.3 Service quality and customer satisfaction

Empirical studies by Choi *et al.* (2004); Naik *et al.* (2010); Cipovova and Demjan (2014); Belas and Gabcova (2014) indicated that providing quality of service leaded to overall customer satisfaction. Additionally, many researchers presented that it existed the close correlation between service quality and customer satisfaction. Hazlina *et al.* (2011) stated service quality was essential to measure customer satisfaction, and provided high quality services could maintain customer satisfaction; Judging whether company provided quality services or not, based on the customer's perception from getting satisfaction, when consuming the services and the higher levels of quality leaded to higher levels of customer satisfaction (Agbor, 2011). Service quality normally regarded prerequisite of customer satisfaction (Shanka, 2012). It was generally agreed increasing probability of customer satisfaction with improvement of service quality. Steven *et al.* (2012) stated this relationship could help to identify optimum efficiency point for company to earn maximum profit, and leaded to increase customer satisfaction (Behn and Riley, 1999; Sim, *et al.*, 2010; Snyder, 2014). Therefore, service quality leaded to satisfaction (Gilbert and Veloutsou, 2006 and Shanka, 2012) and Hussain (2016) mentioned it had positive impact.

2.4 Kano Model Concept

Kano model was developed in 1980 by Professor Noriaki Kano, had been widely practiced in industries as an effective tool of understanding and focusing on customer preferences, requirement prioritization, and requirement classification. There were five attributes suggested for defining factors' importance (Brandt, 1988).
1. "Must-be" was the basic need expected by customers which leaded to extreme customer dissatisfaction if they were absent or poorly satisfied.
2. "One-dimensional" required better fulfillment leading to linear increment of customer satisfaction. Generated dissatisfaction when its absence.
3. "Attractive" usually unexpected by customers and could result in great satisfaction if they were available. Yet, absence would not result in passenger dissatisfaction or loss passenger.
4. "Indifferent" was that customers were not interested.
5. "Reverse" was to create dissatisfaction when existed.
Another attribute is the "Questionable" which is unclear whether this attribute was expected by the customer, and is not undertaken in this study.

Researchers might rank individual product criterion of current product based on the five attributes, therefore determined the importance, and established the priorities for product development and made improvement when was necessary (Kano, *et al.*, 1984). Kano model supports analyzing given service by HK Express, which requirements were expected by

passengers and which services could be improved to give higher customer satisfaction and enhance passenger experience (Hsu *et al.*, 2007).

There were two-dimensional grids as shown in Figure 1. Vertical axis (Y) stands for satisfaction and dissatisfaction of customers, whereas horizontal axis (X) stands for conditions being sufficient or insufficient, some factors were essential to be implied.
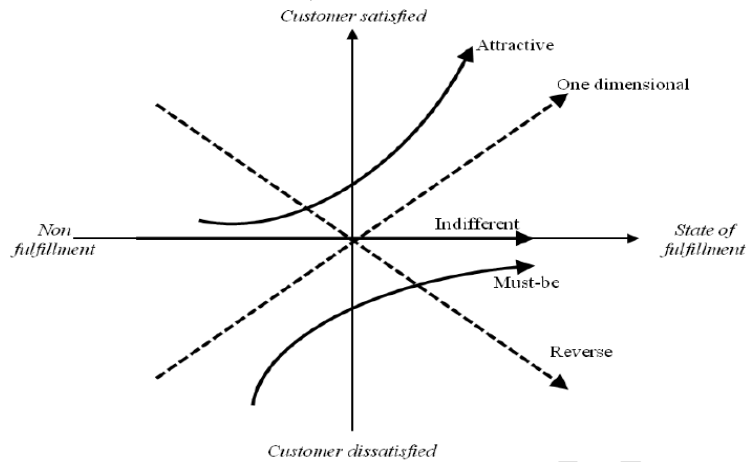
Figure 1. Kano *et al.*, 1984

Questionnaire contained pairs of customer requirement questions, was used to study customer satisfaction level towards the degree of requirement fulfillment (Löfgren and Witell, 2008). The questionnaire contained two questions for each customer requirement (Kano *et al.*, 1984; Berger, 1993). "Neutral", "Must-be", "Like" are procured in questionnaire, so to evaluate six quality attributes of "Attractive", "Must-be", "One-dimensional", "Indifferent" "Reverse" and "Questionable". (Shahin and Nekuie, 2011).

Customer Survey Responses		Dysfunctional Question Answer				
		1. Like	2. Must Be	3. Neutral	4. Live With	5. Dislike
Functional Question Answer	1. Like	Questionable	Attractive	Attractive	Attractive	One-Dimensional
	2. Must Be	Reverse	Indifferent	Indifferent	Indifferent	Must-Be
	3. Neutral	Reverse	Indifferent	Indifferent	Indifferent	Must-Be
	4.. Live With	Reverse	Indifferent	Indifferent	Indifferent	Must-Be
	5. Dislike	Reverse	Reverse	Reverse	Reverse	One-Dimensional

Table 1. Kano Evaluation Table

Each factor could be categorized in an evaluation table shown on Table 1 by using the result of responses. For example, if the response of dysfunctional question was "dislike" and at functional was "must be", the factor would be the "must be" factor and if it was not existed, customer would dissatisfy.

**2.5 Customers Satisfaction Coefficient**

122 Berger (1993) stated the coefficient of satisfaction indicated whether the level of customer
123 satisfaction (CS) could be increased by meeting the requirement, or whether matching the
124 requirement just prevented the customer from being dissatisfied. The positive CS-coefficient
125 ranges from 0 to 1. The value closes to 1 indicates a higher the influence on customer
126 satisfaction whilst the value closes to 0 means smaller influence on customer satisfaction. In
127 a similar way, if negative CS-coefficient approaches −1, the influence on customer
128 dissatisfaction was especially strong when it was not fulfilled as it approached 0 implied the
129 attribute did not cause negative influence if the requirement was unmet (Behdioğlu and
130 Çilesiz, 2016).
131
132 The questionnaire results indicated "extent of satisfaction" (ES) and "extent of dissatisfaction"
133 (ED) of each factor by the following formula (Chen and Chen, 2015; Huang et al., 2015).

$$\text{Extent of satisfaction: ES} = \frac{A+O}{A+O+M+I}$$

$$\text{Extent of dissatisfaction: } x = \frac{M+O}{(A+O+M+I) \times (-1)}$$

138 After calculation, coordinate system would be created in which, X-coordinate was for ES and
139 Y-coordinate was for ED. Each quality attribute could be distributed to different quadrants of
140 the coordinate axis, corresponding to different Kano types (Huang, 2017) as shown in Figure
141 2.
142
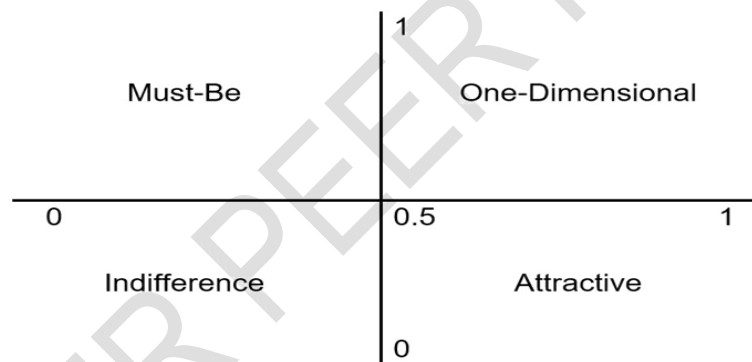
144 Figure 2. Coordinate System of the Kano type

146 Hwang et al. (2014) stated that Kano model and coordinate system carried five benefits for
147 airlines development: (1) Identifying importance of the factors that affecting customer
148 satisfaction and understanding customer requirements; and (2) offering valuable assistance in
149 trade-off situations in order to out of the difficult situation quickly; and (3) providing the
150 'must-be,' 'one- dimensional' and 'attractive' requirements in the perceptions of different
151 customer segments, the model enabled to assured the satisfaction at its best; and (4)
152 discovering and satisfying attractive requirements to increase differentiation; and (5) is used
153 to establish the importance of service providing factors to its customer for formulating
154 development strategy.
155

2.6 Factors affecting service quality and customer satisfaction
157 Researches illustrated the possibilities on integrating of SERVQUAL with Kano Model
158 (Basfirinci and Mitra 2015; Gilbert and Wong, 2003) on airline services proposed 26 factors
159 affecting passenger expectations on airline services and those factors were grouped into
160 seven dimensions, they were assurance, flight patterns, reliability, responsiveness, facilities,
161 employee and empathy. Besides, factors were identified affecting customer satisfaction in

162   airlines, which were similar with these dimensions, therefore, following factors would be
163   included that affected service quality and customer satisfaction in these seven dimensions.
164
2.6.1 Assurance

166   Gilbert and Wong (2003) suggested "Employees have knowledge to answer questions" and
167   "Safety". Besides, Liou and Tzeng (2010) indicated the importance of airline safety
168   customers' choice on airlines, discussed as one of the important factor to airline service
169   quality.
170
2.6.2 Flight patterns

172   Convenient flight schedule was one of variables, was categorized to measure the service
173   quality of airlines (Park *et al.*, 2004). There were three factors defined by Gilbert and Wong
174   (2003), they were "Convenient flight schedules and enough frequencies", "Availability of
175   global alliance partners' network" and "Non- stop flights to various destinations". Besides,
176   Tsantoulis and Palmer (2008) supported airline schedule was in one of the primary service
177   quality dimensions.
178
2.6.3 Reliability

180   "Behaviour of employees gives confidence", "Consistent ground/in-flight services",
181   "Perform service right the first time", "Food and beverage" and "On-time departure and
182   arrival" were categorized in reliability (Gilbert and Wong, 2003). "On-time departure and
183   arrival", the punctuality was to measure satisfaction towards on airlines services. (David,
184   2013; Khan and Khan, 2014). The American Customer Satisfaction Index (ACSI) measured
185   customer satisfaction with the quality of products and services offered by both foreign and
186   domestic firms with significant share in U.S. markets (ACSI, 2017). In "ACSI Travel Report
187   2017", it indicated customer's satisfaction towards on airlines by using 12 dimensions and
188   one of those was "Timeliness of arrival".
189
2.6.4 Responsiveness

191   Gilbert and Wong (2003) summarized "Employees are always willing to help", "Prompt
192   service by employees", "Employees handle requests/complaints promptly" and "Efficient
193   check-in/baggage handling services" for responsiveness on service quality of airlines. Not
194   only Gilbert and Wong (2003) suggested the importance of "Efficient check-in/baggage
195   handling services" on airlines performance affecting service quality, but also Snyder (2014)
196   mentioned "Fast check-in process" could enhance the service quality for satisfying customers.
197
2.6.5 Facilities

199   Gilbert and Wong (2003) suggested "Availability of waiting lounges", additionally, other
200   factors were mentioned not only by Gilbert and Wong (2003). Facilities and services in-flight
201   were in evaluation of customer satisfaction, "clean and comfortable interiors/seat", "In-flight
202   entertainment facilities and programmes" and "In-flight internet/email/fax/phone facilities"
203   (David, 2013; Gilbert and Wong, 2003).
204
2.6.6 Employee

206   Providing sufficient training to employee ensures company to bring responsiveness and show
207   customers were important (Ramseook-Munhurrun *et al.,* 2010). Gilbert and Wong (2003)
208   suggested "Neat and tidy employees" and "Courteous employees". Furthermore, helpful
209   polite employees affected customer satisfaction on airlines (ACSI, 2017).
210
2.6.7 Empathy

212 Delivering the service with caring, individualized attention was vital for providing service
213 quality. Many studies listed this dimension to test whether airlines were dedicated on service
214 quality (Parasuraman *et al.*, 1985; Parasuraman *et al.*, 1988; Grönroos, 2007; Lovelock and
215 Wirtz, 2007). Lai and Wu (2010) suggested "The station staff is professional.", "The traffic
216 hour fulfills passengers' requirements" and "There are adequate facilities for passengers who
217 are physically handicapped" were important.
218
3. Methodology
3.1 Application of Kano Model
221 HK Express is the only Hong Kong based low-cost airline, which was founded for 13 years.
222 However, the effect of passenger expectation on service perception and satisfaction had not
223 been fully investigated (Park *et al.*, 2004). Therefore, achieving better understanding on
224 customer, Kano model would be used to analyze the 29 factors derived from the above 7
225 dimensions to determine passenger satisfaction and dissatisfaction.
226
3.2 Sampling method and sample size
228 Questionnaire was used to collect primary data, which directed sources for researchers to
229 obtain. According to William, Berry, Jon and Mitch (2013), to determine the sample size,
230 260 responses are valid for further statistical analysis. Convenience sampling approach was
231 used for higher response rate. Totally 260 valid responses were collected through face-to-
232 face and online platform from mid-February to early March in 2018 in Hong Kong.
233
234
235
3.3 Questionnaire design
237 The questionnaire composed of two parts. Part one is about respondents' perception on the
238 air services. All questions were set based on the Kano model to design functional and
239 dysfunctional sides. These seven dimensions were referred from Lo and Wang (2016), Zhan
240 (2015), Gilbert and Wong (2003). for designing the questions. The questionnaires are shown
241 in Table 2 below.
242

Dimensions	Factors	Descriptions
Empathy	M1	The air ticket fare is reasonable.
	M2	The baggage fee is reasonable.
	M3	The meal cost is reasonable.
	M4	The cost of using recreational facilities is reasonable.
	M5	The fare of seat selection is reasonable.
	M6	The fee of a change is reasonable.
	M7	The fare of provided travel packages with global alliance partners' network is reasonable.
	M8	Provide variety duty free product.
Flight patterns	M9	The traffic hour is good for passengers.

	M10	The scheduled flight is sufficient to meet passengers' requirements.
	M11	Various destinations for selection.
	M12	The transfer scheduled is convenient for passengers.
Assurance	M13	Airline staff can fully understand and answer customers' questions.
	M14	Airline provides safe flight.
Facilities	M15	Airline's official website provides sufficient information.
	M16	Airline provides magazines and newspapers for in-flight service.
	M17	Airline can provide easy-to-book website platform.
Reliability	M18	Airline can provide on-time departure and arrival.
	M19	Airline can provide consistent ground/in-flight services.
	M20	Airline can perform service right the first time.
	M21	Airline can provide paid food and beverage service.
Employee	M22	Staff with professional knowledge.
	M23	Staff can proactively provide services to passengers.
	M24	Staff can handle complaints timely.
	M25	Staff can handle unexpected situation well.
Responsiveness	M26	Staff can respond to and resolve passengers' problems instantly.
	M27	Staff can handle passengers' complaint and emergency situation.
	M28	Staff with good-attitude to handle baggage that does not meet the requirement.
	M29	Airline is good at handling damaged baggage.

Table 2. Measurement items in Questionnaires

Part two is the demographic information of the respondents that include age, occupation, education background and the experience of taking low cost airline were collected.

Based on studies by Matzler and Hinterhuber (1998), there were five options for each functional and dysfunctional questions: "I like it that way", "It must be that way", "I am

7

neutral", "I can live with it", "I dislike it that way" and the meaning of each option is shown in Table 3.

Scale	Meanings of scale
I like it that way.	When an element is sufficient, you feel "like."
It must be that way.	When an element is sufficient; you feel "must be."
I am neutral.	When an element is sufficient or not, you feel "neutral."
I can live with it that way.	When an element is sufficient; you feel "live with."
I dislike it that way.	When an element is sufficient, you feel "dislike."

Table 3. Meaning of the option of choices

An example of one measurement item is shown in Table 4.

The air ticket fare is reasonable.	If Hong Kong Express Airways Limited **DOES providing** the following service.					If Hong Kong Express Airways Limited **DOES NOT providing** the following service.				
	I dislike it that way.	I can live with it.	I am neutral.	It must be that way.	I like it that way.	I dislike it that way.	I can live with it.	I am neutral.	It must be that way.	I like it that way.

Table 4. Kano Two-dimensional sample questions

4. Analysis of Results and Discussion

4.1 Descriptive analysis

Table 5 shows the analysis of demographics of the respondents in which 103 males (30.62%) and 157 females (60.38%). The majority of respondents were between 21 and 30 years old (47.69%), the group with the highest number was students (37.69%), while professional/manager/administrative and white-collar commerce was second and third, respectively. Nearly half (46.54%) of the respondents had degree or above. The majority of the respondents had experience on taking budgeted airlines (76.92%) and out of those who took budgeted airlines before, about 84% respondents had traveled with HK Express. Besides, most of them travelled by HK Express were for sightseeing and most of them were going to Japan and Taiwan.

Variable	Category	No.	Percentage
Gender	Male	103	30.62%

	Female	157	60.38%				
Age	Age 20 or under	22	8.46%				
	Age 21-30	124	47.69%				
	Age 31-40	46	17.69%				
	Age 41-50	48	18.46%				
	Age 50 or above	20	7.69%				

Table 5. Demographic analysis results

4.2 Kano model analysis

While evaluating the results of the survey, a 5-point scale was used: "1 =I dislike it that way.", "2 = I can live with it that way.", "3 = I am neutral.", "4 = It must be that way." and "5 = I like it that way." for the options chosen by the respondents. Then the highest percentage among the totals of each of these categories for a given requirement was picked as the category for the requirement. Finally, the list of quality requirements was identified.

As shown in Table 1, the Kano model has 6 classifications of quality attributes, they are attractive quality (A), must-be quality (M), one-dimensional quality (O), indifferent quality (I), reverse (R) and questionable (Q) quality, based on the result of functional and dysfunctional responses towards each item. The results show in Table 6 that there was only one factor of attractive quality (M17), three factors of must-be quality (M1, M13, M22), eight factors of one-dimensional quality (M14, M18, M24, M25, M26, M27, M28, M29) and seventeen factors of indifferent quality (M2, M3, M4, M5, M6, M7, M8, M9, M10, M11, M12, M15, M16, M19, M20, M21 and M23).

Dimensions	Factors	M(%)	O(%)	A(%)	I(%)	R(%)	Q(%)	Cl.
Empathy	M1	**28.8**	25.0	15.4	28.1	0.4	2.3	**M**
	M2	25.0	10.4	7.7	**45.4**	8.1	3.5	**I**
	M3	18.5	7.7	9.6	**50.4**	8.8	5.0	**I**
	M4	10.4	5.4	10.0	**61.5**	6.9	5.8	**I**
	M5	15	7.7	7.3	**52.3**	11.9	5.8	**I**
	M6	19.6	7.7	7.3	**50.8**	8.1	6.5	**I**
	M7	8.5	9.6	20.4	**55**	4.2	2.3	**I**
	M8	7.3	9.2	18.5	**58.8**	4.6	1.5	**I**
Flight patterns	M9	7.7	23.1	31.2	**32.3**	1.2	4.6	**I**
	M10	9.2	28.5	28.1	**30.8**	0.4	3.1	**I**
	M11	7.7	20.0	30.8	**37.7**	0.4	3.5	**I**
	M12	10.8	24.6	23.5	**36.5**	1.2	3.5	**I**
Assurance	M13	**31.5**	25.8	13.5	25.0	1.2	3.1	**M**
	M14	32.3	**41.9**	3.8	18.5	0.4	3.1	**O**
Facilities	M15	15	16.5	23.1	**41.9**	1.5	1.9	**I**
	M16	9.2	6.5	20.4	**61.2**	1.2	1.5	**I**
	M17	8.8	21.9	**33.8**	31.9	1.5	1.9	**A**
Reliability	M18	19.2	**36.9**	16.5	25.0	0.8	1.5	**O**
	M19	17.7	21.9	18.8	**38.8**	0.8	1.9	**I**
	M20	17.7	27.3	16.2	**35.8**	1.5	1.5	**I**

	M21	6.5	6.9	11.9	**61.5**	11.2	1.9	**I**
Employee	M22	**31.5**	24.2	16.2	24.6	1.2	2.3	**M**
	M23	18.1	20.8	26.5	**32.7**	0.0	1.9	**I**
	M24	20.4	**34.6**	16.9	25.0	0.4	2.7	**O**
	M25	19.2	**31.2**	21.2	25.4	1.5	1.5	**O**
Responsiveness	M26	19.2	**32.3**	16.9	27.7	0.8	3.1	**O**
	M27	16.2	**31.5**	20.4	28.5	1.5	1.9	**O**
	M28	18.1	**32.3**	18.1	29.2	0.4	1.9	**O**
	M29	22.7	**38.5**	10.4	24.2	0.8	3.5	**O**

Table 6. Kano model analysis for classification

4.2.1 Must-be factors

According to the findings shown in Table 6, there were three must-be factors were identified, they were "The air ticket fare is reasonable", "Airline staff can fully understand and answer customers' questions" and "Staff with professional knowledge".

Firstly, HK Express is renowned as budgeted airline in Hong Kong, there is no doubted customers take "price" as one of concerning aspects to evaluate their choices (Barceló and Santesteban, 2017). It might be the reason on high competitive environment of airline industry, there were numerous airline companies for choosing, tourists are willing to spend more during travel instead of ticket fare.

Besides, staff performance also is an aspect which can influence customer satisfaction towards on airline. Therefore, "Airline staff can fully understand and answer customers' questions" and "Staff with professional knowledge" were integrated in employee aspect for analysis on HK Express. Customers concern on employee performance of HK Express, such as the professionalism, service perceived, and whether the staff could provide expected feedback to customers or not. If must-be factor was absent, customers would generate dissatisfaction toward on company, it might not be surprising that customers were dissatisfied on HK Express because of immediate cancellation and delay issues as taking budgeted airline, there was always baring a risk of delay and sudden cancellation. Hence, it might be easily to generate customers' dissatisfaction.

4.2.2 One-dimensional factors

One-dimensional factors were defined as "'more is better' but could also be 'faster is better' or 'easier is better'" (Shahin and Zairi, 2009), to achieve and maintain better service quality to customers. It was also called performance factor that creates satisfaction when it exists but generates dissatisfaction when it is absent.
From Table 6, there was difference between the results of this study and other research. For example, airline safety was a must-be factor for customers in the finding by Basfirinci and Mitra (2015) whilst it is a one-dimensional factor in this study. It might be due to high safety standard of airlines in Hong Kong, therefore safety would not be the major concern on choosing airlines by customers. Additionally, HK Express recently awarded "Top 10 Safest Low-Cost Airlines" for 2018, which also gave customers confidence on safety.
Besides, on-time departure was also a one-dimensional factor for customers in this study, which share the same result by Basfirinci and Mitra (2015) for USA interviewees. Even though HK Express is well known for its cheap tickets, at the same time it experienced delay and sudden cancellation issues, which brought negative goodwill for HK Express. Therefore, HK Express is required to pay certain attention on punctuality issue for better customer satisfaction.

Moreover, the "Attitude of staffs to deal with customers" was always delighted on customer satisfaction. For example, the questions from M24 to M29 focused on the performance of employees, which could investigate that the most influential factors that affecting customer satisfaction were related with the interaction between staff and customers. These one-dimensional factors were similar with other research (Lo and Wang, 2016; Bing and Hsu, 2007). Bing and Hsu (2007) suggested 52 aspects to examine the factors on influencing satisfaction on airline industry, while their results share the similarity with this research, such as "Staff can handle complaints timely" and "Staff can handle unexpected situation well", these two factors were also placed as one-dimensional factor in the finding by Bing and Hsu (2007). Besides, the other four one-dimensional factors found in this study, "The staff can respond to and resolve passengers' problems instantly", "The staff can handle passengers' complaint and emergency situation", "The staff with good-attitude to handle baggage that do not meet the requirement" and "Airline is good at handling damaged baggage" were also illustrated as one-dimensional factors in the finding by Lo and Wang (2016). Lo and Wang (2016) also commented the significance of interaction between staff and customers to enhance customer satisfaction.

4.2.3 Attractive factor

Attractive quality was the requirements beyond customers' expectation. Kano (1984) referred this as "surprising quality". Their absence did not dissatisfy customers, but their presence delighted customers. An attractive quality had emotion associated with it. An attractive quality was when a customer got more than he was expecting. This type of quality was known as "wow" quality (Breyfogle *et al*., 2001).

Table 6 shows that there was only one attractive attribute found, which is "Airline can provide easy-to-book website platform". The factor was about whether HK Express had good ticketing reservation system for customers. "The system offers easy-to-book feature" meant the searching and booking processes which was simple and user-friendly for customers. Customers do not need to read any instructions in all stages of air ticket reservation.

4.2.4 Indifferent factors

Factors in this category represented that customers are indifferent to these requirements. Customers usually do not care whether these factors are fulfilled or not (Dehdari and Jafari, 2013). Therefore, further analysis will not be developed on these factors.

4.3 Importance of factors categorized by Kano model between those who have taken HK Express before and those who have taken other low cost airline

Table 7 shows that "Staff could handle unexpected situation well" was a one-dimensional factor for respondents who have taken HK Express, but it was an attractive factor for respondents have not taken HK Express. Respondents have taken HK Express thought that "Sufficient scheduled flight" and "Staff can handle passengers' complaint and emergency situation" were indifferent factors. On the contrast, respondents have not taken HK Express indicated that these were one-dimensional factors. Respondents in this group generated different opinions and expectations toward HK Express services and quality of staff. Respondents who have taken HK Express might think insufficient scheduled flights and limited capability of staff were reasonable because of they know they were having services of low-cost carriers. However, those who have not taken HK Express would be delighted if HK Express offered such attributes.

Taken HK Express	M1	M22	M13	M14	M18	M24	M26	M28
Yes	M	M	M	O	O	O	O	O
No	M	M	M/O*	O	O	O	O	O
Taken HK Express	M29	M25	M10	M27	M9	M12	M17	
Yes	O	O	I	I	I	I	I	
No	O	A	O	O	A	A	A	

*Same score for the two categories

Table 7. Factors categorized by Kano mode between those who have taken HK Express before and those who have other LCC

Those factors, "Good traffic hour", "Convenient transfer schedule" and "Easy-to-book website platform" are indifferent factors as found above, therefore, respondents who have taken HK Express might not consider these factors as attractive factors. "Staff can handle unexpected situation well" was a one-dimensional factor for respondents who have taken HK Express but was an attractive factor for others. It might be due to their past experience and expectation towards on HK Express staff on handling unexpected situation for those who have taken the HK Express before.

"The reasonable air ticket fare" and "Staff with professional knowledge" were two must-be factors. The customers classified HK Express as a LCC, as a result, their first consideration would be on "The air ticket fare is reasonable or not". It was unacceptable if the fares became comparable with full-serviced airlines.

There were one-dimensional factors that all respondents agreed with, including M14, M18, M24, M26, M28 and M29. Hence, the respondents would not take "Safe flight" as majority aspect to decide. The "On-time departure and arrival" would directly influence their perception on HK Express, because airlines were expected to strive on punctuality. "Staff could handle complaints timely", "Respond to and resolve passengers' problems instantly" and "Airline is good at handling damaged baggage" were factors that direct interaction were built between customers and airline staff. Thus, customer's perception towards HK Express might influence by their interaction with staff.

4.4 The coefficient of satisfaction
Table 8 shows the requirements that lead to satisfaction/dissatisfaction and coefficient of satisfaction and dissatisfaction.

Dimensions	Factors	Extent of satisfaction	Extent of dissatisfaction
Empathy	M1	**0.42**	**-0.55**
	M2	0.20	-0.40
	M3	0.20	-0.30
	M4	0.18	-0.18
	M5	0.18	-0.28
	M6	0.18	-0.32
	M7	0.32	-0.19
	M8	0.30	-0.18
Flight patterns	M9	0.28	-0.33
	M10	**0.59**	-0.39
	M11	0.53	-0.29
	M12	0.50	-0.37

Assurance	M13	0.41	-0.60
	M14	0.47	**-0.77**
Facilities	M15	0.41	**-0.33**
	M16	0.28	-0.16
	M17	**0.58**	-0.32
Reliability	M18	**0.55**	**-0.57**
	M19	0.42	-0.41
	M20	0.45	-0.46
	M21	0.22	-0.15
Employee	M22	0.42	**-0.58**
	M23	0.48	-0.40
	M24	0.53	-0.57
	M25	**0.54**	-0.52
Responsiveness	M26	0.51	-0.54
	M27	**0.54**	-0.49
	M28	0.52	-0.52
	M29	0.51	**-0.64**

Table 8. The coefficient of satisfaction and dissatisfaction

After calculating the results of ES and ED, each factor was assigned into the coordinate axis in the coordinate system with the questionnaire results. The minus sign in front of the CS-coefficient of customer dissatisfaction was to emphasize its negative influence (Sauerwein *et al.*, 1996), and were shown on Figure 3. The average of the X and Y axes were both equal to 0.41.
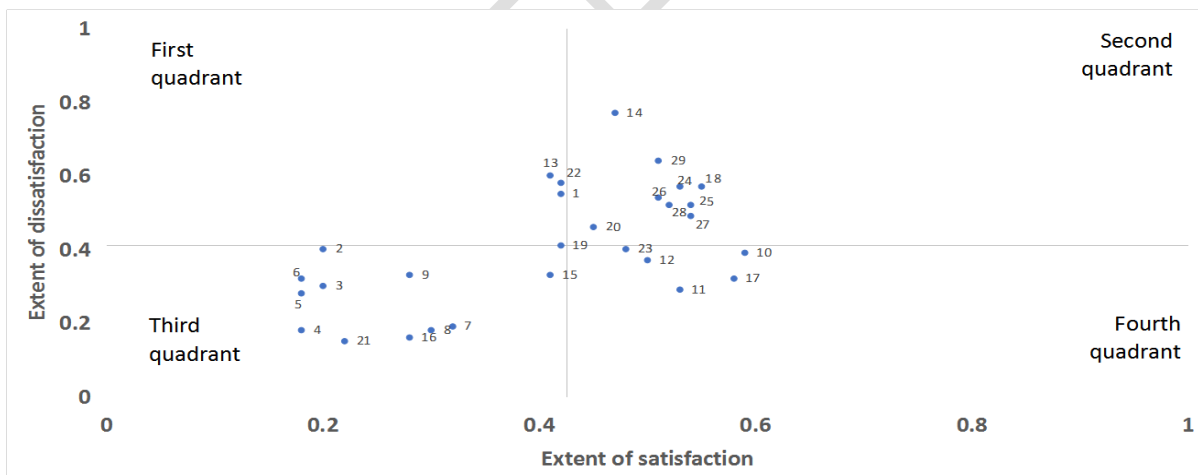

Figure 3. Coordinate System

The coefficient validated the effectiveness of the Kano method. According to the interpretation of the importance performing as shown in Figure 3 was graphically presented on a grid divided into four quadrants. The interpretations of these four quadrants are as followings (Hsu *et al*., 2007):

Quadrant I
The items located in quadrant I on behavior of higher ES and ED coefficients, which were perceived to increase lower extent of satisfaction, but decrease higher dissatisfaction when it was accomplished.

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There were three items (M1, M13 and M22) placed in quadrant I. Because of a very little influence on satisfaction by meeting the items, so just recommend to improve the items in this area more conservative to decrease dissatisfaction.

Quadrant II

The items located in Quadrant II on behavior of higher ES and ED coefficients, which were to increase higher satisfaction and decrease higher dissatisfaction when those are fulfilled.

In this study, there were nine items (M14, M18, M20, M24, M25, M26, M27, M28, and M29) located in Quadrant II. It was suggested that the items in this area should be considered as priority if HK Express would like to make an improvement of service quality.

Quadrant III

The items located in Quadrant III that represented the factors with low ES and low ED.

In this study, ten items (M2, M3, M4, M5, M6, M7, M8, M9, M16 and M21) were identified in Quadrant III. These items in this area have no use to pay much attention on. It was recommended that those factors do not need to be improved when HK Express had no much time and capital to cater these items.

Quadrant IV

The items located in Quadrant IV represented that meeting these factors leads to higher satisfaction, even if they were not fulfilled, customers would not feel dissatisfied.

In this research, Quadrant IV included 5 items (M10, M11, M12, M17 and M23). When HK Express making the marketing strategies, including the items in this area would enable HK Express to enhance customer satisfaction significantly, for example, providing sufficient flights to various destinations for customer to choose.

5. Limitations and Recommendations

This research uses online and offline ways to collect respondents' perception, however there were some limitations as this research only considers about customer's view but not provider's view. By anglicizing the difference between provider and customer would help provider adjust operational strategies and policies. Besides, due to time constraints, some of the groups had smaller sample size that might limit the insight of this study, for example, in the age between 31 and 40 and between 41 and 50. Furthermore, one limitation of the Kano model was that it did not take sufficient account of the degree of importance attached to certain quality elements. For future studies, other models could be used to evaluate the degree of importance of the quality elements in supplementing the Kano model.

6. Conclusion

After defining the objective and factors, the study of the level of importance on different factors by using Kano model towards on HK Express were quoted from different literature reviews, and the study integrated SERVQUAL service model with Kano model. This research collected data with quantitative questionnaire by adopting functional and dysfunctional questions to categorize factors into 6 categories. 29 factors were evaluated in this research, "The air ticket fare is reasonable.", "Airline staff can fully understand and answer customers' questions." and "Staff with professional knowledge." were identified as must-be factors, which customers would dissatisfy if HK Express did not provide these services. Thus, HK Express should constantly improve their service on this basis.

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482 Furthermore, "Airline provides safe flight.", "Airline can provide on-time departure and
483 arrival.", "Staff can handle complaints timely.", "Staff can handle unexpected situation
484 well.", "The staff can respond to and resolve passengers' problems instantly.", "The staff can
485 handle passengers' complaint and emergency situation.", "The staff with good-attitude to
486 handle baggage that do not meet the requirement.", "Airline is good at handling damaged
487 baggage." were one-dimensional factors. The customers would be more satisfied when HK
488 Express could fulfill all those elements, but it was not necessary. Besides, one attractive
489 factor was discovered which is "Airline can provide easy-to-book website platform." It
490 concerns whether HK Express had a good ticketing reservation system that customers could
491 search and book air tickets at anytime and anywhere through online channel. They would
492 surprise and keep support to HK Express for future bookings.
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