

## **Service Quality and Customer Satisfaction on Budget Airlines: Kano Model Approach**

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### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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### **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 services 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 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 have taken or not taken the 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 their service areas that needed to be improved and paid attention to increase customers' satisfaction in future.

*Keywords: Kano model; service quality; customer satisfaction; airlines.*

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## 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 time in last year, it has an increase of 21.65% [1]. Service quality is a main antecedent of customer satisfaction [2,3]. HK Express cannot neglect this issue as it relates to how HK Express can constantly retain customers. Any companies failed to meet customer expectation, or generated customer dissatisfied and eventually will lead to a loss of revenue [4]. More studies mentioned that customer was satisfied if their expectations coincided with actual received outcome (or the result exceeds their expectations), or dissatisfied if the expectations did not meet [5]. However, 18 regular flights cancellation of HK Express recently caused travel headaches for thousands of Hong Kong people in September 2017, which brought customer dissatisfaction and led to negative word-of-mouth of HK Express. By observing 52 reviews from [6] about airline reviews and rating websites, customers claimed that because their flights were cancelled, the services were incompetent and irresponsible, therefore, they said HK Express would not be recommended. Shahin and Zairi [7] stated that Kano model could benefit on investigating customer requirement prioritization, to avoid dissatisfaction. Although Kano model is widely applied in studies relating service and customer satisfaction, it is not commonly applied in investigating the service provided by budget airline. Especially critically importance of this study is that most marketing professionals will expect lower level of quality in budgeted airlines and hotels, however, customers would not have the same expectations. So the significance of this study in applying the Kano model is to identify what the must-be factors for a budgeted airline, HK Express.

## 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 [8], or "as a chain of services in which the entire service delivery is divided into a series of

processes" [9]. Service quality is the interaction between customers and airlines, which influences customers' perceptions and their images [10]. Price is increasingly used to be a ranking method attracting customers, some airlines still try to gain competitive advantage by improving service quality [11] and gained competitive edge by customer perception [12].

### 2.2 Customer Satisfaction

Nowadays interpretations proposed satisfaction as customer fulfillment response [13], which was one of the most crucial objectives for company aiming to have a long-term relationship with customers [14]. There are many factors customers would take into consideration before purchasing air-ticket, which are driving their expected perceived performance from airlines. And customer satisfaction is considered as an industrial standard performance and possible measurement criterion of excellence of company [15]. Therefore, providing desirable service for customers is important for airlines to achieve their goals [15] and possibly survive in the competition.

### 2.3 Service Quality and Customer Satisfaction

Empirical studies by [16,17,18,19] indicated that providing quality of service leads to overall customer satisfaction. Additionally, many researchers presented that there exists a close correlation between service quality and customer satisfaction. Kadir et al. [20] stated that service quality is essential to measure customer satisfaction, and providing high quality services could maintain customer satisfaction; Judging whether company could provide quality services or not, one could base on the customer's perception from getting satisfaction when consuming the services. In addition, higher levels of quality leads to higher levels of customer satisfaction [21]. Service quality normally is regarded as a prerequisite of customer satisfaction [22]. It is generally agreed that increasing possibility of customer satisfaction with improvement of service quality. Steven et al. [23] stated this relationship that could help to identify optimum efficiency point for company to earn maximum profit, and lead to increase customer satisfaction [24,25, 26]. Therefore, service quality has a positive impact to customer satisfaction [22,27,28].

### 2.4 Kano Model

Kano model was developed in 1980 by Professor Noriaki Kano and had been widely practiced in industries as an effective tool of understanding and focusing on customer preferences, requirement prioritization, and requirement classification. There are five attributes suggested for defining the importance of factors [29].

1. "Must-be" is the basic need expected by customers which leads to extreme customer dissatisfaction if they were absent or poorly satisfied.
2. "One-dimensional" requires 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" is that customers were not interested.

5. "Reverse" is 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 determine the importance, and established the priorities for product development and made improvement when necessary [30]. Kano model supports the analysis of given service by HK Express, in which the requirements are expected by passengers and which services could be improved to give higher customer satisfaction and enhance passenger experience [31].

There is a two-dimensional grids as shown in Fig. 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.

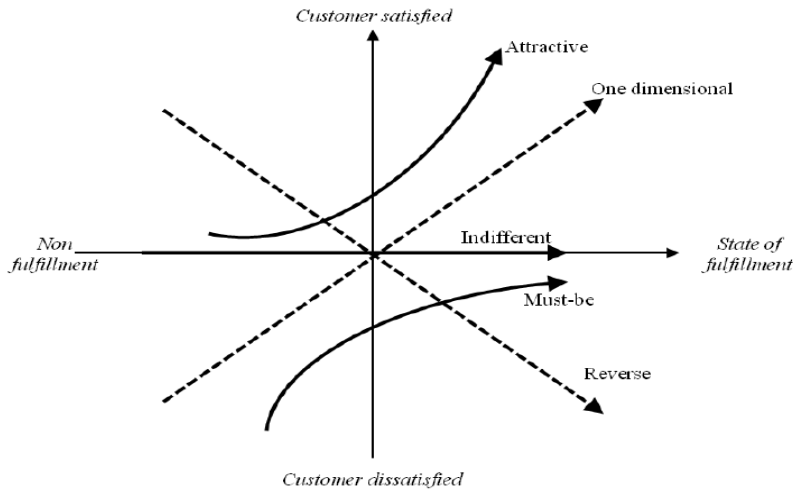


Fig. 1. Kano model [30]

Table 1. Kano evaluation table

Customer survey responses	Dysfunctional question answer				
	1. Like	2. Must be	3. Neutral	4. Live With	5. Dislike
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

Questionnaire contained pairs of customer requirement questions which were used to study customer satisfaction level towards the degree of requirement fulfillment [32]. The questionnaire contained two questions for each customer requirement [30,33]. "Neutral", "Must-be", "Like" are procured in questionnaire, so to evaluate six quality attributes of "Attractive", "Must-be", "One-dimensional", "Indifferent" "Reverse" and "Questionable" [34].

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**

Berger [33] stated that coefficient of satisfaction indicates whether the level of customer satisfaction (CS) could be increased by meeting the requirement, or whether matching the requirement that preventing customer from being dissatisfied. The positive CS-coefficient has a range from 0 to 1. This value closing to 1 indicates a higher influence on customer satisfaction whilst the value closing to 0 means lower influence on customer satisfaction. In a similar way, if negative CS-coefficient approaches -1, the influence on customer dissatisfaction is especially strong when it was not fulfilled. As the value near 0 implies that the attribute does not cause negative influence if the requirement was unmet [35].

The results of the questionnaire indicate "extent of satisfaction" (ES) and "extent of dissatisfaction"

(ED) of each factor by the following formula [36,37].

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

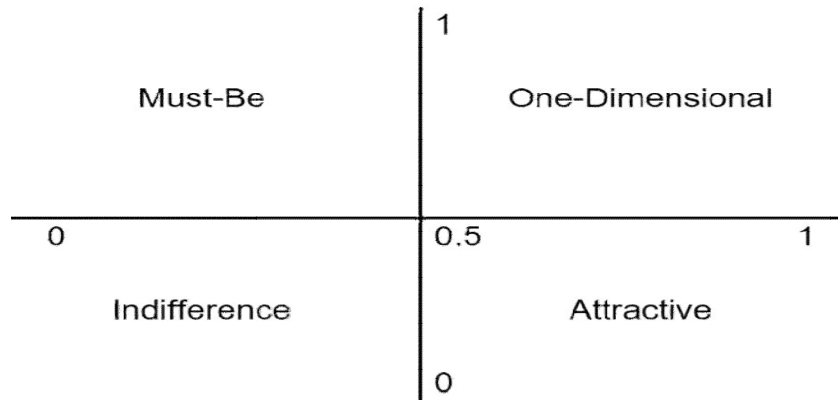
$$\text{Extent of dissatisfaction: } x = \frac{M+O}{(A+O+M+I) \times (-1)}$$

After calculation, coordinate system could be created in which, X-coordinate is for ES and Y-coordinate is for ED. Each quality attribute could be distributed to different quadrants of the coordinate axis, corresponding to different Kano types [38] as shown in Fig. 2.

Hwang et al. [39] stated that Kano model and coordinate system carried five benefits for airlines development: (1) Identifying importance of the factors that affecting customer satisfaction and understanding customer requirements; and (2) offering valuable assistance in trade-off situations in order to out of the difficult situation quickly; and (3) providing the 'must-be,' 'one-dimensional' and 'attractive' requirements in the perceptions of different customer segments, the model enabled to assured the satisfaction at its best; and (4) discovering and satisfying attractive requirements to increase differentiation; and (5) using to establish the importance of service providing factors to its customer for formulating development strategy.

**2.6 Factors Affecting Service Quality and Customer Satisfaction**

Researches illustrated the possibilities on integration of SERVQUAL with Kano Model [40,41] on airline services in proposing 26 factors that affect passenger expectations on airline services and those factors were grouped into



**Fig. 2. Coordinate system of the Kano type**

seven dimensions, they were assurance, flight patterns, reliability, responsiveness, facilities, employee and empathy. Therefore, those factors would be included in this study that affect service quality and customer satisfaction.

### **2.6.1 Assurance**

Gilbert and Wong [41] suggested “Employees have knowledge to answer questions” and “Safety”. Besides, Liou and Tzeng [42] indicated the importance of airline safety customers’ choice on airlines, discussed as one of the important factors to airline service quality.

### **2.6.2 Flight patterns**

Convenient flight schedule is one of variables categorized to measure the service quality of airlines [8]. There were three factors defined by Gilbert and Wong [41], they are “Convenient flight schedules and enough frequencies”, “Availability of global alliance partners’ network” and “Non- stop flights to various destinations”. Besides, [43] supported airline schedule as one of the primary service quality dimensions.

### **2.6.3 Reliability**

“Behaviour of employees gives confidence”, “Consistent ground/in-flight services”, “Perform service right the first time”, “Food and beverage” and “On-time departure and arrival” were categorized in reliability [41]. “On-time departure and arrival”, the punctuality is to measure satisfaction towards on airlines services [13,44]. The American Customer Satisfaction Index (ACSI) measures customer satisfaction with the quality of products and services offered by both foreign and domestic firms with significant share in U.S. markets [45]. In “ACSI Travel Report 2017”, it indicated customer’s satisfaction towards on airlines by using 12 dimensions and one of those was “Timeliness of arrival”.

### **2.6.4 Responsiveness**

Gilbert and Wong [41] summarized “Employees are always willing to help”, “Prompt service by employees”, “Employees handle requests/complaints promptly” and “Efficient check-in/baggage handling services” are the responsiveness on service quality of airlines. In addition, [41] suggested the importance of “Efficient check-in/baggage handling services” on airlines performance affecting service quality whilst [25] mentioned “Fast check-in process” could enhance the service quality for satisfying customers.

### **2.6.5 Facilities**

Gilbert and Wong [41] suggested “Availability of waiting lounges”, additionally, other factors about facilities and services in-flight were used in evaluation of customer satisfaction, such as “clean and comfortable interiors/seat”, “In-flight entertainment facilities and programmes” and “In-flight internet/email/fax/phone facilities” [13,41].

### **2.6.6 Employee**

Providing sufficient training to employee ensures company to bring responsiveness to customers and show importance of customers [46]. Gilbert and Wong [41] suggested “Neat and tidy employees” and “Courteous employees”. Furthermore, helpful polite employees affected customer satisfaction on airlines [21].

### **2.6.7 Empathy**

Delivering service with caring and individualized attention is vital for providing service quality. Many studies listed this dimension to test whether airlines were dedicated on service quality [47,48,49,50]. Lai and Wu [51] suggested “The station staff is professional.”, “The traffic hour fulfills passengers’ requirements” and “There are adequate facilities for passengers who are physically handicapped” are important in this dimension.

## **3. METHODOLOGY**

### **3.1 Application of Kano Model**

HK Express is the only Hong Kong based low-cost airline, which has been founded for 13 years. However, the effect of passenger expectation on service perception and satisfaction had not been fully investigated [8]. Therefore, achieving better understanding on customers, Kano model would be used to analyse the 29 factors derived from the above 7 dimensions to determine passenger satisfaction and dissatisfaction.

### **3.2 Sampling Method and Sample Size**

Questionnaire was used to collect primary data. According to Berry and Sanders [52], a sample size of 260 responses are valid for further statistical analysis. Convenience sampling approach was used for higher response rate. Totally 260 valid responses were collected

through face-to-face and online platform from mid-February to early March in 2018 in Hong Kong.

### 3.3 Questionnaire Design

The questionnaire composed of two parts. Part one is about the respondents' perception on the air services. All questions were set based on the Kano model to design functional and dysfunctional sides. The seven dimensions were referred from [31,53,54] in designing the questions. The questionnaires are shown in Table 2.

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

Based on the studies by Matzler and Hinterhuber [55], there were five options for each functional and dysfunctional questions: "I like it that way", "It must be that way", "I am neutral", "I can live with it", "I dislike it that way" and the meaning of each option is shown in Table 3.

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

**Table 2. Measurement items in questionnaires**

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 3. Meaning of the option of choices**

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 4. Kano two-dimensional sample questions**

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.

**4. ANALYSIS OF RESULTS AND DISCUSSION**

**4.1 Descriptive Analysis**

Table 5 shows the analysis of the 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 the second and the 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%) whilst about 84% respondents had traveled with HK Express.

**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 results of functional and dysfunctional responses towards each item. The results in Table 6 show 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).

**Table 5. Demographic analysis results**

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 6. Kano model analysis for classification**

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

#### 4.2.1 Must-be factors

According to the findings shown in Table 6, there were three “must-be factors” 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 doubt that customers will take “price” as one of concerning aspects to evaluate their choices [56]. It might be the reason on high competitive environment of airline industry, there are numerous airline companies for choosing, tourists are willing to spend more during their travel instead of ticket fare.

Besides, staff performance also is an aspect which can influence customer satisfaction towards airline. Therefore, “Airline staff can fully understand and answer customers’ questions” and “Staff with professional knowledge” are

integrated in employee aspect for analysis of HK Express. Customers will concern employee performance of HK Express, such as their professionalism, service perceived, and whether the employees could provide expected feedback to customers or not. If must-be factor was absent, customers would generate dissatisfaction which might not be surprising that customers are dissatisfied on HK Express because of immediate cancellation and delay issues recently which leads to customers for bearing a risk of delay and sudden changes of their trip. Hence, it might be easily to generate customers’ dissatisfaction.

The results imply two significant issues, the service level by employees and guarantee service offered. As most companies providing budgeted services usually expect the customers can tolerate limited service. The result found here states that it is not true. No matter what price level offer, high level of service is a must factor to satisfy customers. Of course, guaranteed service but finally cancelled is



definitely dissatisfying customers at all. Management needs to treat this issue and try their best not to let this cancellation of service happen.

#### 4.2.2 One-dimensional factors

One-dimensional factors are defined as “more is better’ but could also be ‘faster is better’ or ‘easier is better’” [7], to achieve and maintain better service quality to customers. It is 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 [40] 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 receives the award “Top 10 Safest Low-Cost Airlines” in 2018, which also gives customers confidence on safety.

Besides, on-time departure is also a one-dimensional factor for customers in this study, which shares the same result found by Basfirinci and Mitra [40] for USA interviewees. Even though HK Express is well known for its cheap tickets, at the same time it experiences delay and sudden cancellation issues, which brought negative goodwill for HK Express. Therefore, HK Express is suggested to pay certain attention on punctuality issue for better customer satisfaction.

Moreover, the “Attitude of staffs to deal with customers” is always delighted on customer satisfaction. For example, the questions from M24 to M29 focus on the performance of employees, which show that the most influential factors that affecting customer satisfaction are related to the interaction between staff and customers. These one-dimensional factors are similar with other research [53,57]. Bing and Hsu [57] 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 [57]. 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” are also illustrated as one-dimensional factors in the finding by Lo and Wang [53]. Lo and Wang [53] also commented the significance of interaction between staff and customers to enhance customer satisfaction.

It further proves the importance of interaction between customers and staff. The interaction is not only just what the server serves the customers, but also how the server serves. Whether the customers think that the servers are caring about them and how the server solve unexpected situation, like sudden problems and complains.

#### 4.2.3 Attractive factors

Attractive quality is the requirements beyond customers’ expectation. Kano et al. [30] referred this as “surprising quality”. Their absence does not dissatisfy customers, but their presence delights customers. An attractive quality had emotion associated with it as customers get more than they are expecting. This type of quality was known as “wow” quality [58].

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

To satisfy customers by providing services more than customers’ expectation is very critical. Although it is practically not easier, management needs to aware of this attractive factor and provides frequent promotion that over the customers’ expectation, such as very special price of tickets.

#### 4.2.4 Indifferent factors

Factors in this category means that customers are indifferent to these requirements. Customers usually do not care whether these factors are fulfilled or not [59]. Therefore, further analysis will not be developed on these factors.

**4.2.5 Questionable factors**

As mentioned above that the questionable factors were not considered in this study, however, those kinds of questions were included in the questionnaires for control purpose. The results of questionable shown in Table 6 proves the assumption of this study as their values all are the lowest in each of the items in each dimension of service quality.

**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” is a one-dimensional factor for respondents who have taken HK Express before, but it was an attractive factor for respondents who 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 towards HK Express services and quality of staff. Respondents who have taken HK Express might think that insufficient scheduled flights and limited capability of staff were reasonable because 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.

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” is a one-dimensional factor for respondents who have taken HK Express but is an attractive factor for others. It might be due to their past experience and expectation towards the staff of HK Express on handling unexpected situation for those who have taken the HK Express before.

“The reasonable air ticket fare” and “Staff with professional knowledge” are two must-be factors. Customers classifies 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 those of full-serviced airlines.

There are 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 are 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” are 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.

After calculating the results of ES and ED, each factor is assigned into the two axis in a coordinate system with the questionnaire results. The minus sign in front of the CS-coefficient of customer dissatisfaction is to emphasize its negative influence [60] that shown on Fig. 3. The average of the X and Y axes are both equal to 0.41.

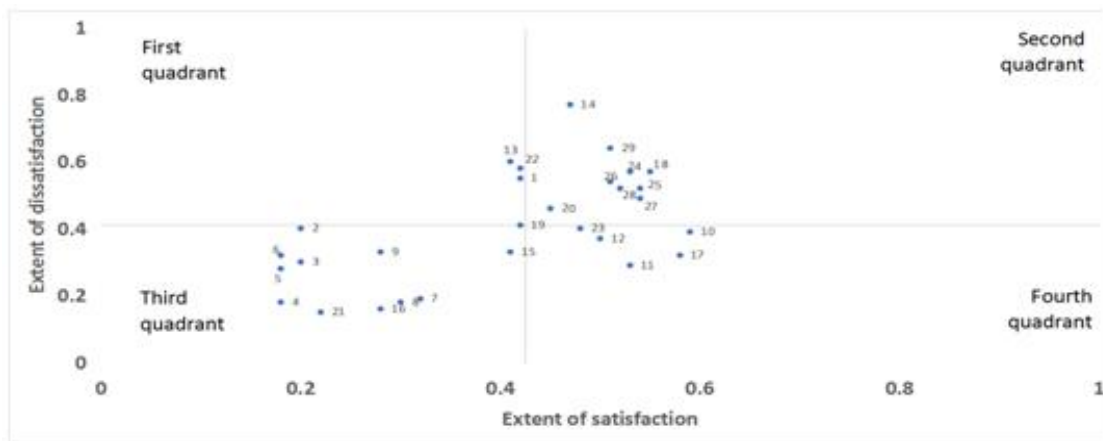
**Table 7. Factors categorized by Kano mode between those who have taken HK Express before and those who have other LCC**

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

*\*Same score for the two categories*

**Table 8. The 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
Assurance	M12	0.50	-0.37
	M13	0.41	-0.60
Facilities	M14	0.47	-0.77
	M15	0.41	-0.33
Reliability	M16	0.28	-0.16
	M17	0.58	-0.32
	M18	0.55	-0.57
Employee	M19	0.42	-0.41
	M20	0.45	-0.46
	M21	0.22	-0.15
	M22	0.42	-0.58
Responsiveness	M23	0.48	-0.40
	M24	0.53	-0.57
	M25	0.54	-0.52
	M26	0.51	-0.54
	M27	0.54	-0.49
	M28	0.52	-0.52
	M29	0.51	-0.64



**Fig. 3. Coordinate system**

The coefficients found validate the effectiveness of the Kano method. According to the interpretation of the importance performing as shown in Fig. 3 which graphically presents on a grid that divided into four quadrants, the interpretations of these four quadrants are as followings Hsu et al. [31].

**4.4.1 Quadrant I**

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

There are three items (M1, M13 and M22) placed in quadrant I. Because of a very little influence on satisfaction by meeting these items, so there is no strong recommendations to improve these items in this area as they are more conservative to decrease dissatisfaction.

#### 4.4.2 Quadrant II

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

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

#### 4.4.3 Quadrant III

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

In this study, ten items (M2, M3, M4, M5, M6, M7, M8, M9, M16 and M21) are identified in Quadrant III. These items in this area have lower level of attention. It is recommended that those factors do not need to be improved when HK Express does not have much time and capital to cater these items.

#### 4.4.4 Quadrant IV

The items located in Quadrant IV represent 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 are some limitations as this research only considers about customer's view but not

provider's view. By anglicizing the differences 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 using the Kano model is 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 HK Express were quoted from different literature reviews, and this study integrates 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." are 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 by their staff even though they are budgeted airline. It is important business strategy that lower price does not implies providing lower level of service. HK Express needs to provide more training to their staff in offering high quality of service.

Furthermore, "Airline provides safe flight.", "Airline can provide on-time departure and arrival.", "Staff can handle complaints timely.", "Staff can handle unexpected situation well.", "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.", "Airline is good at handling damaged baggage." are one-dimensional factors. The customers would be more satisfied when HK Express could fulfill all those elements, but it was not necessary. However, just recalling the descriptions above, training to employees in providing qualified service is being a must in contemporary keen competitive environment. Besides, one attractive

factor is found which is "Airline can provide easy-to-book website platform." It concerns whether HK Express has a good and user friendly online ticketing reservation system that customers could search and book air tickets at anytime and anywhere. It is not surprising as more tourists, especially with lower budget in their trips, will book all services through online booking environment, so it is necessary for HK Express to enhance service in this channel.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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