

# AN ANALYSIS OF THE CUSTOMER SATISFACTION: A CASE STUDY OF BANK SERVICE

Haeryip Sihombing<sup>1</sup>, Parahsakthi Chidambaram<sup>2</sup> and Kannan Rassiah<sup>3</sup>

<sup>1</sup>Fakulti Kejuruteraan Pembuatan (FKP), Universiti Teknikal Malaysia Melaka (UTeM), Main Campus – Durian Tunggal, 17609 – Melaka, MALAYSIA

<sup>2</sup>Politeknik Ibrahim Sultan (PIS)81700 Pasir Gudang, Johor Bahru, MALAYSIA

<sup>3</sup>Politeknik Merlimau Melaka (PMM) Merlimau 77300, MALAYSIA

## ABSTRACT

*This study focuses on how to measure the customer satisfaction in the service industry towards the satisfaction aspects considered of the ServQual criteria. The questionnaires developed were using Kano criteria that manipulate the qualitative data of quality attributes into quantitative value and Likert scale based on the quantitative values. By comparing the results data of Likert scale and Kano criteria related to the service delivered, the measurement carried out in this study is towards the service of bank industry. The correlation among them, based on what the functional and dysfunctional of Kano domain compared to the Likert scale, are to validate what the main criteria required for the improvement priorities against customer satisfaction. This is due to the method of CAT ranking and graphical between CS versus DS are ambiguity for justifying the improvement of priorities required.*

**Keywords:** Customer Satisfaction, Kano, CS-DS, CAT.

## 1. INTRODUCTION

A major outcome of marketing activities is not only related to how much profit can be achieved, but also on how high the customer satisfaction resulted from the activities. The examination on this is especially to the specifications matched to the customer expectation and the fair exchange of a value at a price and potential for the utilization related to service given [1]. This can be experienced in a variety of situations connected to the goods and services [2,3].

Related to the service of banking industry where the lending function, as an example, is considered as the most important function for the utilization of funds [4], the loans provided actually will give the highest gross profits to the bank. In such case, there is, however the opposite result as a risk of the main cause of bank failure if there was the large number of non-performing loans occurred. A number of scholars proposed how to measure and evaluate the quality of service provided by bank as a service provider in terms of customer satisfaction as follows:

- a) BANKSERV as a form of service quality as perceived by the customer [5]
- b) Personal interaction [6]
- c) Optimal loan size [7] ; saving and loan [8]
- d) Consumer involvement in financial services [9]
- e) Service performance [10]
- f) Financial Performance [11]
- g) Customer orientation, trust, length of relationship, expertise and ethics [12]
- h) Bank and Customer Preferences [13]
- i) Image, perceived service quality and satisfaction to determine loyalty [14]

Beck *et al.*, [15] stated that the factors which influence lending function are the size of bank, the relative importance of consumer credit within the bank, the structure of the bank, the abilities of bank personnel, and the bank's objectives and strategies. McQuitty *et al.*, [16] in this sense put the assumption that a customer will learn from experience where the decreasing levels of expectations and disconfirmation against goods and services should affect customer satisfaction.

The facts, many scholars with the case of services given have reviewed the service perceptions and expectations, such as banking [17,18] , financial and loan funding [19,20], insurance, [21], hospital [22], and health center [23]. In brief, they proposed a positive linear relationship between staff satisfaction, service quality and customer satisfaction which leads ultimately to profitability. However, according to Kumar *et al.*, (2008:176-177), they are not clearly

differentiating the service quality constructed between functional service quality (FSQ) (which means doing things nicely) and technical service quality (TSQ) (which is doing things right) for the related service forms towards the strategy in providing a better service to customers.

Moreover, Hanan and Karp [25] explained that the satisfaction is based on the customer's experience of both contacts with the organization and personal outcomes. Kotler [26] argued that, "*Customers' feeling of pleasure or disappointment resulting from comparing a product's perceived performance or outcome in relation to their expectations.*" On this issue Padilla [27] stated that customer may be satisfied with a product or service, an experience, a purchase decision, a salesperson, store, service provider, or an attribute. For an instance, in the financial services industry where the services provided is characterized by the increasing competition [5], is a relatively mature market for retail banking and little growth in primary demand [28], as well as narrow lending spread and focused niche players [29]. Although their primary driver is for the greater profit, the exemplary businesses focused on the customer and experience with the organization in goods or service. They treat customer satisfaction in order to determine how to increase customer base, customer loyalty, revenue, profits, market share and survival in monitoring businesses. They also explored links between variables concerning the customer satisfaction which includes the customer service and customer loyalty.

Therefore, first, many service industries should pay greater attention to customer service quality and customer satisfaction in order to increase the competition and deregulate the total perception of the quality of a service as the outcome (technical quality), rather than simply addressing service quality from a functional perspective [24,30,31]. Second, it is also important for company to get more profitability and to achieve the profit target margin. In this point of views, customer relationship development and management systems need to be focused heavily by companies [32], besides the development of effective customer relationships that need to be recognized as an essential component of marketing strategies in service industries [33]. Since quality of services in the service industries are globally remained as a critical point for businesses strategy to a comparative advantage in the marketplace [34], then service quality become a primary competitive weapon [35], particularly in bank industries in which they should focus their strategy through quality of services given as a core competitive strategy [36]. This is due to banking service in providing their financial service; they accept deposits and channel those deposits into lending activities, either directly or through capital markets.

## **2. LITERATURE REVIEW**

Hsu and Cai [37] asserted that when customer satisfaction is modelled as a function of disconfirmation arising from discrepancies between prior expectations and actual performance, then the expectations as a critical antecedent of satisfaction becomes a determinant of attitude [1]. The customer satisfaction in this view is related to a highly personal assessment and greatly affected by customer expectations. Grönroos [30] previously emphasized that how good the quality of the product perceived by customers should be based on the measurement towards the approaches of attitude determinant of customer satisfaction, especially, to the service perceptions and expectations value where customer dissatisfaction affects an organization in various ways such as:

- The customer who experiences an unsatisfactory service encounter may never patronize that particular service provider again.
- The customer may not only want to have that incident rectified, but may request that the damage done to their interpersonal relationship with the provider be repaired [38,39], thereby incur costs to the organization.
- The organization must worry about losing prospective customers as well as present ones. This is due to (perhaps) the most damaging to the organization which is the tendency for an unsatisfied customer to engage in negative word-of-mouth communication [40].
- The organization needs to be able to differentiate between the numerous variables that influence the consumer's selection of particular coping strategies. This is to enable them to respond in the most appropriate fashion and be aware that specific coping strategies may influence what consumers perceive to be satisfactory service outcomes.

In brief, the above mentioned problems in banking industry need to be interpreted as the following:

- The problem of the customer dissatisfaction due to the period for loan approval process might take a few days or within a week to progress it [33]. There were several documentation processes which have to be processed in order to get the financing loan approval. In this, the loan documentation for processing included application form, personal details, loan processing, and loan approval, while the documentation personal details included income statement, document related to property and finance, and personal detail such Identity Card (IC). The loan processing which includes site visit and premise business is managed by a loan officer. The loan processing takes a lengthy period for the loan approval process because the loan officer needs to site visit to verify and confirm that the property to be financed is in good condition and premise business to verify and confirm the applicant's position in the company or business. In addition, the officer needs to verify the income

statement by checking the employees' provident fund (EPF). The main purpose for verification of loan processing is to prevent any fraud documentation by customer, but the period for loan approval process might take along period to progress it. This is one of the factors which cause customer dissatisfaction in loan service provided by the selected bank.

- The requirement and qualification for proposed loan approval is very tight. There are some documentations required related to such as fixed deposit, property, monthly high income or guarantor to guarantee the financing loan. Without any of the guarantees' support and/or due to the low monthly income, it is becoming a reason on why it is quite difficult to get the loan approval because of the low financial ability. Others are the character of bad payment, high exposure and non performing loan so that it is difficult to get loan approval due to the payment not on time and not updated, besides many commitments, and not paying the payment for more than 3 months. The bad characters will be noticed and it will most possibly be blacklisted from the bank company. In fact, the tight requirements and qualifications cause customer dissatisfaction in loan service, besides the margin of the loan proposal that does not necessarily guaranteed for fully getting margin of the financing loan. In addition, the customer needs to wait for a long period for the documentation processing approval without any guarantees on their loan proposal approved. In some cases, bank only offers less than 80% margin of financing loan or does not give the loan approval. In this, the margin of financing loan approval does not fulfill the customer requirement or the loan proposal was not approved by bank. This has, therefore, become one of the reasons on why some customer prefers to get a loan from private money lender with high interest charged in which the loan approval is approved fast and easy, even sometimes without any guarantee required.

Considering the above, ServQual and Kano models will be used to measure the customer perception, expectation, and satisfaction where the analysis and measurement on customer satisfaction are conducted against as follows:

1. Quality of service in banking company towards the customer satisfaction.
2. Customer satisfaction in banking company is based on Kano model towards ServQual.

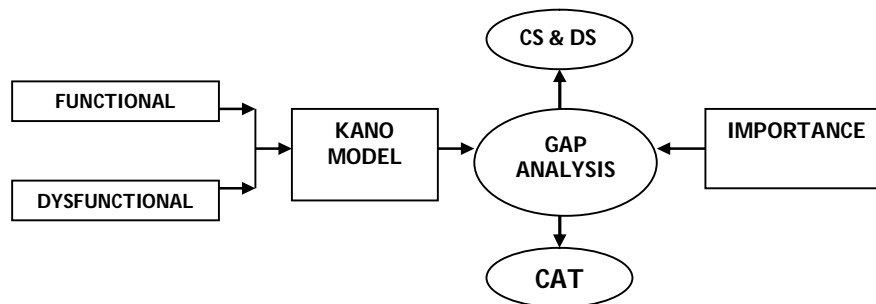
### **3. METHODOLOGY**

In order to understand and determine the customer needs and their impact on customer satisfaction, this study categorizes the different customer requirements (CRs) based on Kano criteria [41]. Using the analysis of service quality provided to customers based on service quality (ServQual) criteria [42,43], the target of this study is the external customers of the bank selected versus how the service quality is given, response and feedback from the customers, and system running in the bank.

The survey conducted is through observation and questionnaires, while the data collected were then used, analyzed and interpreted by using SPSS software. Two types of questionnaires are developed and used to analyze the customer satisfaction towards their feeling, needs, opinion and feedbacks. First, Kano criteria that contains of pairwise questionnaire designed with methods of dichotomous statement (functional and dysfunctional). Based on the 5 attributes of customer requirements for the functional and dysfunctional form they are used to analyze customer needs and categorizes the attributes of customer requirements (CRs). The questions developed are according to the customer needs, customer requirements (CRs) and quality performance based on quality attributes of Kano model for evaluation such as Attractive (A), One-Dimensional (O), Must-Be (M), Indifferent (I), Questionable (Q), and Reverse (R).

Second, the Likert scale that contains of 1 until 5 of scaling value towards the questionnaire designed for the external customers who come to the bank for applying the loan service of the bank. The general information and responses from the questionnaires were analyzed by statistical method. On this, the experience of customer towards the performance of provider related to service delivered is called as the gap analysis. This is involving a comparison of expectations with performance [42], while on how satisfied the customers are based on Kano model, which is also known as the difference between customer satisfaction (CS) and customer dissatisfaction (DS). According to Sihombing *et al.*, [44] the measurement of customer satisfaction can be carried out based on gap analysis between CS-DS, CAT, and Importance as shown in figure 1, as following:

1. The correlation of Kano criteria results related to customer satisfaction towards the importance and performance of service delivered to customer, will depict as follows:
  - a) How satisfied the customer is towards the company performance of their service given.
  - b) What priorities are required by the provider related to the importance of customer's view in order to improve the service delivered.
2. The characteristics of service delivered to customer based on functional and dysfunctional criteria towards the importance and performance of service delivered, will depict as follows:
  - a) What are the elements of functional that customer's view as the importance of service delivered to them.
  - b) What are the elements of dysfunctional that customer's view as not important to them, and how the performance of service are delivered to them.



**Figure 1:** Customer Satisfaction Gap Analysis

#### 4. RESULTS AND DISCUSSIONS

The questionnaires were distributed to customers who directly contribute to the bank. The sample size was based on the population, confidence level, and interval (100, 95%, 8) where there 260 respondents of the selected bank are involved in this study.

##### 1.1 Analysis based on Likert

There are 17 questions developed according to ServQual, customer satisfaction and problems occurred in the banking service. Table 2 shows that all the average values of respondent response against questionnaires are in the range of 3.77 to 4.8, which is in the range between “neutral” to “strongly agree”. Based on the result, the responses for calling service for 24 hours (L5), service information through mass media advertisement (L6), suggestion box provided (L8), and (L9) suggestion and complaint column in website are in the range of “agree” to “neutral”. While, the services of telecommunication facilities (L1), website (L2), electronic consultancy (L3), onsite consultancy (L4), customer service (L7), period for applying loan and loan approval (L10, L11, and L12), and margin of financial loan offer by bank (L13 and L14) is between the range of “agree” to “strongly agree.” They are towards more than 80% margin of financing loan, employees’ service, employees in proper attire and good explanation related to loan service.

##### 1.2 Analysis based on Kano

There are 15 questions developed to determine the customers’ feeling according to customer satisfaction and problems occurred in the banking service. Table 2 shows that Attractive (A) attributes are the most that customers chose for Kano section as follows:

- The services of electronic consultancy (K3), on side consultancy (K4), customer service (K7), period for applying loan and loan approval (K10 and K11), margin of financial loan offer(K12), employees’ proper attire (K13), good attitude (K15), and good explanation to serve customer (K14) are the attractive attributes. This means that the customers would be satisfied if these services were provided; otherwise, they would not be satisfied.
- The services of telecommunication facilities (K1), bank website (K2), 24 hours calling service(K5), service information through the mass media (K6), suggestion box (K8) and complaint column (K9) provided by bank are in Indifferent attributes which customers would feel and think indifferent on whether the services were present or not.
- There is no questionable condition existing in reverse condition.
- It is found that 4 reverse conditions exist (K10, K11, K12, and K15). There is only 1.67% (1 out of 60), this means that the customers may be dissatisfied if the services are presented.

According to Kano’s model, the horizontal axis indicates the level of fulfillment of a specific CR, while the vertical axis denotes the level of customer dissatisfaction towards the fulfillment level of that CR in the Kano diagram. The CS and DS values can reflect the average impact of a CR on the satisfaction of all customers which included percentage of customers who expressed satisfaction with the existence of a certain CR, in case of its non-fulfillment, and the percentage of customers who expressed dissatisfaction [45]. The model can illustrate the relationship between customer satisfaction and quality performance, which is customer perception described as follows:

- a) Figure 2 and 3 shows the CS value, DS value, CS-DS value and characteristic of questions through Kano model. The most satisfaction to the service features included consultancy (K3, K4), customer service (K7), period for applying loan and progressing the loan approval (K10,K11), margin of financial loan (K12), proper attire to serve customer (K13), explanation related to loan service (K14), and employee's service (K15). The attractive attributes lead to external customer satisfaction and shows that those services mentioned above is an

attribute to which the customer want compared to others. The CS value of Attractive attributes is higher than DS value, which means that the customer is more satisfied than dissatisfied with the services provided.

- b) The criteria from question number 1, 2, 5, 6, 8, and 9 are as Indifferent attributes, whether the services were present or not. This includes telecommunication facilities, bank website, calling service, service information, suggestion box, and complaint column provided by bank. The CS and DS value of the Indifferent attributes is close to zero which means that customer feels Indifferent whether these services were provided or not.
- c) Figure 2 shows the characteristic of questions in Kano model where the attributes of K1, K2, K5, K6, K8, K9 are Indifferent attributes and shown in the area CS↓. This is reflected in Figure 2 that shows the overall CS coefficient and DS coefficient where Indifferent attributes are depicted in condition CD=<0.4 and DS>-0.2.
- d) By using the classification of Kano towards Functional and Dysfunctional scores as suggested by Tantonni [46], Figure 3 shows as follows:

$$FI = \sum \text{Degree of Satisfaction with existence} / (\text{Number of responses} \times 2) \tag{1}$$

$$DI = - \sum \text{Degree of Dissatisfaction with inexistence} / (\text{Number of responses} \times 2) \tag{2}$$

Table 2: Five Generic Service Quality Dimensions vs. Expectation and Perception Attributes Values

Service Quality dimensions		Details	EXPECTATION/EXPERIENCES Attributes					PERCEPTION Attributes								
			Likert Q	MEAN	Std Dev	RANK	Alpha Cronbach	Kano Q	Kano	MEAN			RANKING			Alpha Cronbach
										[F] Func	[DF] DysFunc	K	CS-DS	CAT	K	
Tangibles	Appearance of Physical Facilities	TA1: Telecommunication facilities	L1	4.05	0.70	5	0.882	K1	I [A]**	1.73 [4.27]*	3.57 [2.43]*	3.04	8 [0.4]	14 [0.2]	6	F=0.877 DF=0.703 FDF=0.700 Kano=0.743
		TA2: Bank Website	L2	4.07	0.73	6		K2	I [A]**	1.82 [4.12]*	3.55 [2.45]*	3.02	6 [0.32]	8 [0.367]	5	
		TA3: Suggestion box	L8	3.9	0.60	3		K8	I [A]**	1.97 [4.03]*	3.45 [2.55]*	2.97	3 [0.25]	4 [0.5]	3	
		TA4: Complaint column	L9	3.82	0.62	2		K9	I [A]**	1.92 [4.08]*	3.5 [2.5]*	2.99	4 [0.3]	6 [0.4]	4	
	Appearance of Equipment															
Reliability	Perform as promised	RE1: Period for applying loan	L10	4.38	0.74	10	0.965	K10	A [O]**	1.37 [4.63]*	4 [2]*	3.15	7 [0.44]	10 [0.267]	11	F=0.984 DF=0.884 FDF=0.603 Kano=0.857
	Perform accurately	RE 2: Period for progressing the loan approval	L11, L12	4.39	0.77	11 12		K11	A [O]**	1.33 [4.67]*	4.05 [1.95]*	3.16	5 [0.44]	13 [0.233]	14	
Responsiveness	Willing to help customer	RS 1: Consultancy	L3, L4	4.37	0.69	8 9	0.921	K3, K4	A [I]**	1.5 [4.5]*	3.55 [2.45]*	3.07	13 [0.58]	12 [0.267]	7	F=0.940 DF=0.802 DF=0.698 Kano=0.744
		RS 2: Calling service	L5	3.77	0.81	1		K5	I [A]**	2.2 [3.8]*	3.53 [2.47]*	2.93	1 [0.08]	1 [0.817]	1	
		RS 3: Service information	L6	3.98	0.81	4		K6	I [A]**	2.02 [3.98]*	3.45 [2.55]*	2.95	2 [0.25]	5 [0.483]	2	
		RS 4: Customer service	L7	4.13	0.83	7		K7	A [I]**	1.53 [4.47]*	3.68 [2.32]*	3.09	11 [0.52]	15 [0.117]	9	
		RS 5: Employee service	L17	4.68	0.57	16		K15	A [O]**	1.22 [4.78]*	3.95 [2.05]*	3.16	9 [0.54]	9 [0.267]	15	
Assurance	Knowledge of employees	AS 1: Margin of financial loan	L13, L14	4.63	0.55	13 14	0.882	K12	A [O]**	1.25 [4.75]*	3.93 [2.07]*	3.16	10 [0.56]	7 [0.4]	13	F=0.948 DF=0.737 FDF=0.518 Kano=0.560
	Knowledge courtesy	AS 2: Explanation related to loan service	L16	4.68	0.50	15		K14	A [I]**	1.22 [4.78]*	3.73 [2.27]*	3.14	15 [0.74]	3 [0.583]	10	
Empathy	Level of Caring															
	Individualized attention	EM 1: Proper attired to serve customer	L15	4.8	0.40	17	0.960	K13	A [I]**	1.18 [4.82]*	3.85 [2.15]*	3.16	14 [0.72]	2 [0.6]	12	F=0.966 DF=0.875 Kano=0.855

Note: \* reverse of actual data.

\*\* 2<sup>nd</sup> Max of Kano Attributes.

$$K = \text{Ln} \{ [((F*DF)^2) + ((DF*F)^2) / (F+DF)] + [((F*DF)^2) + ((DF*F)^2) / (DF+DF)] / 2 \}$$



The Kano attributes of K1, K2, K5, K6, K8, and K9 is I (Indifferent) where the FI ↓ and DI ↓.

- e) By considering the Likert scale as the expectation (where the average is 4.3), while the Kano scale is considered as the perception (where the value of 3 as “Neutral”), we can find that K5, K6, K8, and K9 are in the area of perception ↓ and expectation ↓ (Figure 4)

Based on the above, it can be concluded that the company has to improve its perception in the eyes of the customer. Although Berger *et al.*, [47] and Sauerwein [48] suggested that “M>O>A>I”, the facts that if the priorities given to A (Attractive attribute), which are K3, K4, K7, K10, K11, K12, K13, K14, and K15 (Figure 2), the results will only be to Indifferent or One-Dimensional attributes as shown in 2<sup>nd</sup> Max. Therefore, due to K1, K2, K5, K6, K8, and K9 in Indifferent attributes (Figure 1) where the 2<sup>nd</sup> Max is in Attractive attribute (Table 2) and in the area of expectation ↓ (Figure 3), then the priorities given for improvement should be in perception ↓, that are K5, K6, K8, and K9. This is also supported through the ranking comparison, where they have consistency in the top 5 of highest ranking based on the average of Likert, CS-DS, CAT, and K (see Table 2).

**1.3 Analysis based on ServQual**

According to Table 3, the ServQual dimension of Responsiveness shows as the highest negative gap (-0.43). The larger the gap between perception and expectation, the more the urgent expectation of customer attributes given priorities. This condition may cause dissatisfaction. However, since the measurement considered by ranking of the mean values and so on (as described in Table 2), the focus for improvement (on Table 3) does not only lie on the element of service delivered to customer. Since we use ServQual attributes, the gap between expectation and perception in this table only shows the criteria of ServQual that needs to be prioritized for improvement.

**Table 3:** Result of Gap Score Calculation

Service Quality dimensions	Factor	FI	DI	EXPECT	PERCEP	Weight (W)	Gap (G)	W x G	RANK	Mean
Tangibles	TA1 Telecommunication facilities	0.64	0.28	4.05	3.04	0.215	-1.01	-0.22	11	-0.20
	TA2 Bank Website	0.60	0.28	4.07	3.02	0.215	-1.05	-0.22	10	
	TA3 Suggestion box	0.53	0.23	3.9	2.97	0.215	-0.93	-0.20	12	
	TA4 Complaint column	0.55	0.25	3.82	2.99	0.215	-0.83	-0.18	14	
Reliability	RE1 Period for applying loan	0.83	0.52	4.38	3.15	0.156	-1.23	-0.26	7	-0.23
	RE2 Period for progressing the loan approval	0.85	0.54	4.39	3.16	0.156	-1.23	-0.19	13	
Responsiveness	RS1 Consultancy	0.76	0.28	4.37	3.07	0.378	-1.30	-0.49	2	-0.43
	RS2 Calling service	0.42	0.27	3.77	2.93	0.378	-0.84	-0.32	6	
	RS3 Service information	0.51	0.23	3.98	2.95	0.378	-1.03	-0.39	4	
	RS4 Customer service	0.73	0.34	4.13	3.09	0.378	-1.04	-0.39	3	
	RS5 Employee's service	0.91	0.48	4.68	3.16	0.378	-1.52	-0.58	1	
Assurance	AS1 Margin of financial loan	0.89	0.48	4.63	3.16	0.166	-1.47	-0.24	9	-0.25
	AS2 Explanation related to loan service	0.90	0.38	4.68	3.14	0.166	-1.54	-0.26	8	
Empathy	EM1 Proper attire to serve customer	0.92	0.43	4.8	3.16	0.085	-1.64	-0.35	5	-0.35

**1.4 Analysis based on Correlation between Likert and Kano**

Since the result based on Likert and Kano method in previous part did not exactly depict what the element of service delivered that should be given as priorities for improvement, to analyze this therefore we measure the correlation between them in order to justify which attributes of service quality is important and significant to each other.

Table 4 and 5 shows that the correlation between Kano, Functional and Dysfunctional does not occur on the ServQual dimensions of “Reliability” and “Empathy”. While they are compared with Likert (Table 6), the correlation between “Assurance” dimension of ServQual can be ignored since no correlation is found (Green color). Hence, the correlation among the ServQual attributes considered is only on “Tangibles” and “Responsiveness, as follows:

- (i) Kano 8 ↔ F1 ↔ DF1 ↔ L1
- (ii) Kano 3 ↔ F9 ↔ DF9 ↔ L9

However, since the consideration for improvement is among the elements of service quality attributes, then the decision for improvement priorities should be given to “Tangible” attributes that are pertinent to Kano 8 or TA 3. This means that the company website should provide with the facilities of the “Suggestion Box”, in order to make the customers communicate their needs and feelings about the service delivered by the company. Viewing on this, by

providing the better facilities related to how the customer can communicate with the company, it would make the service delivered by company “Attractive” (as the customer latent needs or 2<sup>nd</sup> Max of Table 2). This is supported with the value of expectation (3.9), perception (2.97), CS-DS, CAT, and K in Table 2, where they have ranking level 3 and 4. In Figure 3 and 4, the location of FI↓& DI ↓ and Expectation ↓& Perception ↓.

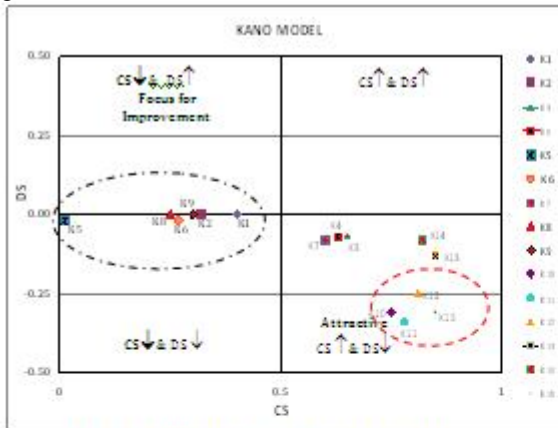


Figure 1: Plots of CS vs. DS for Kano questions

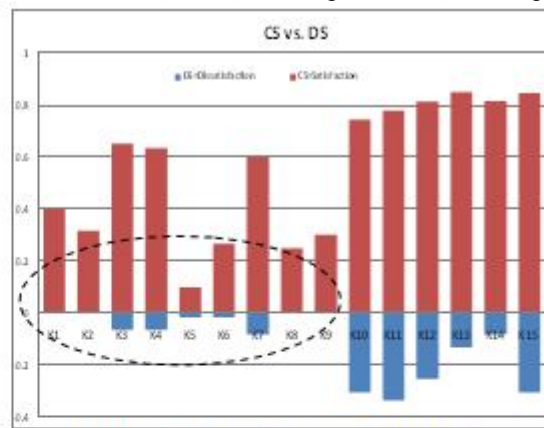


Figure 2: CS-coefficient vs. DS-coefficient

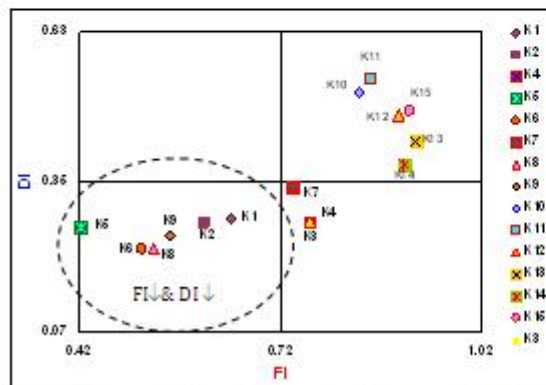


Figure 3: Functional Score (FI) vs. Dysfunctional Score (DI)



Figure 4: Plots of Likert (Expectation) vs. Kano (Perception)

Although based on Table 2, the bigger gap occurred in “Responsiveness” attributes of ServQual (-0.43), the gap of Kano 8 or TA 3 is close enough to -1, that is -0.93. On the other hand, the Kano 3 or RS 1 shows that the quality of ServQual attributes is “Attractive”, where the latent need and 2<sup>nd</sup> Max is “Indifferent”. This means that this attribute will be formed “Indifferent”, even though the company makes the improvement.

Table 4 Correlation between Kano vs. Functional

		TANGIBLE				RELIABILITY		RESPONSIVENESS					ASSURANCE		EMPATHY	
		KANO1	KANO2	KANO3	KANO9	KANO10	KANO11	KANO3	KANO4	KANO5	KANO6	KANO7	KANO15	KANO12	KANO14	KANO13
TANGIBLE	F-1															
	F-2															
	F-8															
RELIABILITY	F-10															
	F-11															
RESPONSIVENESS	F-3															
	F-4															
	F-5															
	F-6															
	F-15															
ASSURANCE	F-12															
	F-14															
EMPATHY	F-13															

\*\* Correlation is significant at the 0.01 level (2-tailed).  
 \* Correlation is significant at the 0.05 level (2-tailed).

Table 5 Correlation between Kano vs. Dysfunctional

		TANGIBLE				RELIABILITY		RESPONSIVENESS					ASSURANCE		EMPATHY	
		KANO1	KANO2	KANO8	KANO9	KANO10	KANO11	KANO3	KANO4	KANO5	KANO6	KANO7	KANO15	KANO12	KANO14	KANO13
TANGIBLE	DF-1			.272(**)												
	DF-2															
	DF-6															
	DF-9															
RELIABILITY	DF-10															
	DF-11															
RESPONSIVENESS	DF-4															
	DF-5															
	DF-6															
	DF-7															
ASSURANCE	DF-12															
	DF-14															
	DF-15															
	DF-13															

\*\* Correlation is significant at the 0.01 level (2-tailed).  
 \* Correlation is significant at the 0.05 level (2-tailed).

Table 6 Correlation between Kano vs. Likert

		TANGIBLE				RELIABILITY		RESPONSIVENESS					ASSURANCE		EMPATHY	
		KANO1	KANO2	KANO8	KANO9	KANO10	KANO11	KANO3	KANO4	KANO5	KANO6	KANO7	KANO15	KANO12	KANO14	KANO13
TANGIBLE	L-1			.272(**)	.448(**)											
	L-2															
	L-8															
	L-9															
RELIABILITY	L-10															
	L-11															
	L-12															
	L-13															
RESPONSIVENESS	L-4															
	L-5															
	L-6															
	L-7															
ASSURANCE	L-14															
	L-16															
	L-15															

\*\* Correlation is significant at the 0.01 level (2-tailed).  
 \* Correlation is significant at the 0.05 level (2-tailed).

5. CONCLUSION

1. The significant findings related to customer satisfaction obtained through the use of Kano method and Likert towards ServQual are as follows:
  - a) Based on the analysis using such as
    - i) Ranking level against their average value. They are found almost similar, especially when they are considered in the biggest 5<sup>th</sup> (Table 2). However, they are quite different compared to ranking level using weighted method [45] as shown in Table 3.
    - ii) The biggest 5<sup>th</sup> for improvement. It was found that the priorities for improvement are on “Tangibles” and “Responsiveness” attributes of ServQual (K8 or L8 or TA3, K9 or L9 or TA4, K5 or L5 or RS2, and K6 or L6 or RS3). This is based on the ranking level towards average values of Likert, CS-DS, CAT, and K (see the row with the grey color in Table 3). In addition, this is also supported with the graph method which stated about the comparison between CS vs. DS (Figure 1), FI vs. DI (Figure 3), and Expectation vs. Perception (Figure 5), where they are all in quadrant-1 (low and low).
    - iii) Gap score between Expectation and Perception. The weighted coefficient is multiplied with the Gap value in order to find the priorities for improvement based on the biggest different between the average value of Expectation and Perception. Based on this method (Table 3), we found that the Responsiveness attributes is having the biggest gap (-0.43) where the element of quality is on RS5 or K15 or L7.
  - b) Based on the Correlation



- i) By comparing Kano against their pairwise questions (functional and dysfunctional), we can find that the correlation among them will justify which one of the elements related have a correlation. On this approach, we can see that the attributes of "Reliability" and "Empathy" of ServQual do not have correlation among their elements.
    - ii) What the correlation inside the attributes between both the pairwise questions (functional and dysfunctional) can be a source of what the improvement required and how they are improved. This is by comparing both above the correlation with Kano vs. Likert scale (Table 6). Based on this, besides "Reliability" and "Empathy" not having correlation, we can see that only among elements inside the "Tangible" have correlation (Kano 8 ↔ F1 ↔ DF1 ↔ L1), while outside the elements occurred on Kano 3 ↔ F9 ↔ DF9 ↔ L9.
  - c) The different result between the methods used for analysis (a) and the correlation (b). In order to focus on what the priorities should be made for improvement, we can therefore combine both (a) and (b). On this, since the concentration is on among the elements of ServQual, then we can find the priorities for improvement is on Kano 8 which has correlation with F8, DF8 and Likert 1. We put aside Kano 3 or RS1 as first priority for consideration since it is already in "Attractive" (and the latent needs or 2<sup>nd</sup> Max is Indifferent). Improving on this element will certainly make the customer feel attractive to the service given and delivered. On the other hand, the ranking level of K3 or RS 1 is not in the top biggest 5<sup>th</sup>. Furthermore, based on Table 3, we can find that Kano 8 or TA 3 has less of the average value (Expectation=3.9 and Perception =2.97). Since we know that the Kano attributes of each element involved are "Attractive" and Indifferent", this means that the less average of perception should be increased. This is based on the perspectives of "M>O>A>I" [47-49].
2. The correlation between Kano, Functional, and Dysfunctional against Likert (Table 4, 5, and 6), gives the justification for the priority improvement required which refers to perception against expectation/experiences as follows:
- a) Based on expectation/experience of customer through Likert, the customers agree to satisfy related to the service given through telecommunication facilities provided (L1), consultancies (L3 and L4), and services of the bank employees (L17). However, the bank provides the service for customer (to give suggestion as a feedback for the bank) through suggestion box (K8) and also complaint column in bank website (K9) as Indifferent (I) attributes. This means that such service is not different in the view of customer based on customer expectation/ experiences.
  - b) The suggestion box for Kano is strongly negative significant to the telecommunication facilities. Furthermore, consultancy for Kano is negatively significant (  $p < 0.01$ ) to the complaint column. This shows that the Likert service delivered is opposite to the Indifferent attributes of suggestion box provided (based on Kano attributes). For the overall correlation between Likert and Kano are as follows:
    - i) The correlation between elements of "Suggestion Box" and "Telecommunication" is medium (-0.473%), however they are negative. This means that by increasing the facilities for telecommunication between company and customer, then the suggestion box that should be provided in the website is becoming less of their usability.
    - ii) For "Consultancy" (K3, K4 or L3, L4 or RS1), the customer will feel it as Attractive. This is having correlation with "Complaint Column" (K9 or L 9 or TA4). The correlation is medium negative (-0.441). This means that if the company provides the improvement in consultancies, then the "Complaint Column" facilities will decrease. On the other hand, this service ("Consultancy") will become Indifferent. Based on this perspective, the improvement should be given to "Complaint Column" in order to shift from Indifferent to Attractive attributes.
  - c) Based on (i) and (ii), we can conclude that the attention or focus of the improvement requirement related to ServQual attribute is on "Tangible".
3. The using of ranking method (based on *i.e.* average value of Likert , CS-DS, and CAT) in order to find the improvement priorities should be justified with additional methods, such as graph, correlation, or other ranking methods. This is due to the justification using ranking only will face the difficulties if they are not consistent with each other. This is what we found when using weighted score method [46] that is not consistent to the other ranking method.

In this study, we, therefore, propose the correlation method. However, since the study carried out is in limited scope, further study with more samples, different area of services and different customers are required in order to justify the method proposed.

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