AN ANALYSIS OF QUALITY CRITERIA TO DETERMINE THE IMPROVEMENT PRIORITY ATTRIBUTES

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ABSTRACT: The focus of this study is on how to find out the improvement priorities for customer satisfaction. The identification, analysis, and evaluation conducted in this study is to the Voice of Customer (VoC) based on the service attributes of SERVQUAL. To explore customer satisfaction, the survey distributed is through questionnaire developed using Kano method and Likert scale to the customers of event organizer in Selangor, especially the customers who are using their services for wedding events. While to find out what the attributes of service delivered as the elements for improvement required, the analysis conducted is through the integration of ranking level, customer satisfaction-dissatisfaction (CS-DS) values and graph, and their correlation. In this study, the statistical analysis conducted using SPSS is to construct the comparison between Kano method results against the quality attributes based on pairwise of Functional and Dysfunctional condition to find out the correlation and the relationship among the service elements identified. This study found that "The electronic service to communicate with customer (K1)" of the service attributes of "Responsiveness" is as the first priority improvement required by customer.

KEYWORDS: *Kano Method, SERVQUAL, VoC, CS-DS.*

1.0 INTRODUCTION

To understand the customer's expectation is not solely depend on the fulfilment of customer's need and the existence of the product or services performance delivered to them [1]. Based on this point of view, what the challenges and competitions faced by the companies in the market are, however, not only on how they can identify what the customer satisfaction and requirements. This due to the customer satisfaction is, in facts, an ambiguous and abstract concept since the

real manifestation of the state of satisfactions varies from person to person, also against products or services [2].

In addressing this issue, firstly, Tse and Wilton [3] argued that the company should also need to consider the customer response to the mismatches (disconfirmation) perceived between prior expectations and actual performance of a product. They saw that the perceived performance is as a comparison form against the expectations in the picture of customer feelings level [4]. Secondly, Wilkie [5] stated that since the customer satisfaction has a strong relation towards an emotional challenge of the experience based on the consumption of a product / service, there are the purchase evaluations required against the customer's expectations and dissatisfaction of the selected alternatives. This is especially if the expectations results (outcome) were not met [6]. Related to both views, scholars articulated it on

- how the process in creating and delivering the value to customers in the marketplace as the combination formed of customer satisfaction and price [7],
- how to create service values with the aim of satisfying customer (how the company must create service values that must correctly attribute the related factors related of the identified quality) [8],
- the assumption that a customer will learn from experience in which the decreasing levels of expectations disconfirmation against goods and services should affect customer satisfaction [9],
- the using of satisfaction ratings as the performance indicator of products and services delivered, beside the indicator of the company's future [10].

On realities, to understand customer requirements are much more technically complex than in consumer market [11], especially in service sector. Even though, there are several of companies have been or might be successfully in implementing their strategy related to customer satisfaction through the quality improvement of products. However, the approaches of product quality measurement are still in scientific debate on superiority of one method over another; where the methods are then usually not treated as complementary, rather as alternative tools [12]. Specifically, Grigoroudis et al., [13] underlined about a number of the measurable parameters that directly linked to several aspects of company's products/services or else that remain as an abstract and intangible notion. Also, to a commonly problem occurred while analyzing data from customer satisfaction surveys due

to the comparison of the stated and derived of importance for a set of satisfaction dimension [13,14].

Based on this reason, this study carried out as follows:

1. To identify and analyze the customer requirement as the Voice of Customer (VOC) through Functional Deployment.
2. To identify and find out what the priorities improvement required by using several methods such as ranking level, graph, and statistical calculation based on functional deployment of customer satisfaction related to service product characteristics through Kano and SERVQUAL method (Service Quality).

II. LITERATURE REVIEW

The "Voice of the Customer" (VOC) is a process used to capture the requirements or feedback from the customer in order to provide best-in-class service or product quality. The using of VOC is to describe the stated and unstated needs or requirements of the customer in a variety of ways, such as direct discussion or interviews, surveys, focus groups, customer specifications, observation, warranty data, field reports, and complaint logs. The tools used to interpret VOC are as follows:

A. Kano Method

The Kano model offers some insight into the product attributes perceived to be important to customers. Kano's model is employed as a starting point of the proposed quantitative analysis that involves the conducting of preliminary study, developing, and administrating the Kano questionnaire. On this method, the most frequent observations of the sample set of responses are considered as the final Kano category for CR (customer requirements) [15], where

a) Quantitative analysis conducted to the customer satisfaction based on Kano's model is through by calculating two values which are "better" and "worse". Here, in order to reflect the average impact of a CR on customer satisfaction (CS) or dissatisfaction (DS) of all customers [16] as follows:

   i.) Coefficient of cause of satisfaction (CS):

$$\frac{A+O}{A+M+O+I} \tag{1}$$

ii.) Coefficient of cause of dissatisfaction (DS):

$$\frac{O+M}{A+M+O+I} \tag{2}$$

b) the decisions made for product developments related to the improvement required towards the products are on the features that has the greatest influence on the perceived product quality [17,18], where their evaluation rule as follows :

$$M > O > A > I \tag{3}$$

In this formula, M stands for 'Must-be' requirements, O for 'One-dimensional' requirements, A for 'Attractive' requirement and I stands for 'Indifferent' requirements. The range of 'Must-be' attribute has the largest range than the other attribute based on the evaluation rule about the first taking requirements into consideration for satisfaction condition. This is meant that by disregarding the requirement of category M based on Kano's method as the basic elements of products will creates dissatisfaction [19]. The 'Indifferent' attribute (or I) has only minor influence to the employee's satisfaction since the employees will doesn't feel dissatisfy even though this attribute was not fulfilled. Kano et al., [15] stated the quality attributes to the requirements for satisfaction as follows:

- Must-be Requirements (Threshold / Basic attributes). If these requirements are not fulfilled, the customer will be extremely dissatisfied. The must-be requirements are basic criteria of a product. Fulfilling the must-be requirements will only lead to a state of "not dissatisfied". Must-be requirements are in any case a decisive competitive factor, and if they are not fulfilled, the customer will not be interested in the product at all.
- One-dimensional Requirements (Performance / Linear). With regard to these requirements, customer satisfaction is proportional to the level of fulfillment – the higher the level of fulfillment, the higher the customer's satisfaction and vice

versa. One-dimensional requirements are usually explicitly demanded by the customer.

- Attractive Requirements (Exciters / Delighters). These requirements are the product criteria which have the greatest influence on how satisfied a customer will be with a given product. Attractive requirements are neither explicitly expressed nor expected by the customer. Fulfilling these requirements leads to more than proportional satisfaction. If they are not met, however, there is no feeling of dissatisfaction.
- Indifferent Attributes. The customer does not care about this feature. Means that the customer is not concerned with this product attribute and is not very interested whether it is present or not.
- Questionable Attributes. It is unclear whether the customer expects this attribute. This situation occurs if there is a contradiction in the customers' answers to the paired questions. A questionable rating indicates incorrectly phrased question, misunderstanding of a question, or an incorrect response.
- Reverse Attributes: Means that some of the respondents' satisfaction decreases with the existence of this requirement, but they also expect the reverse of it.

Table 1 shows the six categories quality attributes influenced to the customer satisfaction.

Table 1: Kano's evaluation table.

FUNCTIONAL	DYSFUNCTIONAL				
	1. Like	**2. Must-be**	**3. Neutral**	**4. Live with**	**5. Dislike**
1. Like	Q	A	A	A	O
2. Must-be	R	I	I	I	M
3. Neutral	R	I	I	I	M
4. Live with	R	I	I	I	M
5. Dislike	R	R	R	R	Q

A = Attractive ; M = Must- be; R = Reverse; O = One- dimensional ; I = Indifferent; Q = Questionable

c) Category Strength (CA) Value. This category strength (CAT) method is a suitable method to determine the priorities within a requirements category. Based on the value of CAT for the ranking order is to know which categories have to be first priority. The maximum value of CAT is at the first place as the priority among the other requirement. The lower

percentage of the CAT value means that the requirements are satisfy the customer or employee feeling. The CAT index as formula below:

CAT = the first most frequently-given nomination (%) – the second most frequently nomination (%) (4)

B. Five Generic Service Quality Dimensions

Servqual model is the method used to measure the quality of service. Parasuraman et al., [20] defined the 5 attributes dimensions of service quality (SERVQUAL) as follows:

- Reliability: ability to perform the promised service, dependably and accurately.
- Responsiveness: willingness to help customers and provide prompt service.
- Assurance: knowledge and courtesy of employees as well as their ability to inspire trust and confidence.
- Empathy: caring, individualized attention the firm provides its customers.
- Tangibles: appearance of physical facilities, equipment, personnel, and communication materials.

III. METHODOLOGY

This study conducted the analysis towards the service provider through the Voice of Customer (VOC) identification. The data and information of the Voice of Customer (VOC) related to Event Organizer or Event Planning Management (EO) performance is categorized into the important level of service specification based on ranking level. Here, the ranking level used is to generate the importance level of service products based on the customer needs, while Kano model is to determine what the factors that satisfy the customer. In this study, the customer needs as the articulation of 5 dimensions of SERVQUAL that assess 30 items of services required by customer where Kano method and Likert scale is the satisfaction measurement related to the customer responses through the questionnaire developed.

Specifically, in Kano method, each product feature a pair of questions is formulated to which the customer can answer in one of five different ways. The first question concerns to the reaction of the customer if the product has the feature (functional form of the question), while for the second question concerns to the reaction if the service does not have

the feature (dysfunctional form of the question). The wording of the alternatives is the most critical choice made in the Kano methodology (that is, "I like it that way," "It must be that way," "I am neutral," "I can live with it that way," "I dislike it that way"). While, in Likert scale, the questionnaire is developed based on "Strongly Like", "Like", "Nor Like or Dislike", "Dislike", and "Strongly Dislike". In this approach, the questionnaire developed refers to SERVQUAL instrument as customer evaluation tools towards service quality that were subsequently included into five generic Parasuraman's service quality dimensions, such as tangibles, reliability, responsiveness, assurance , and empathy. Fig.1 shows how to categorize the quality attributes which requires improvement priorities.

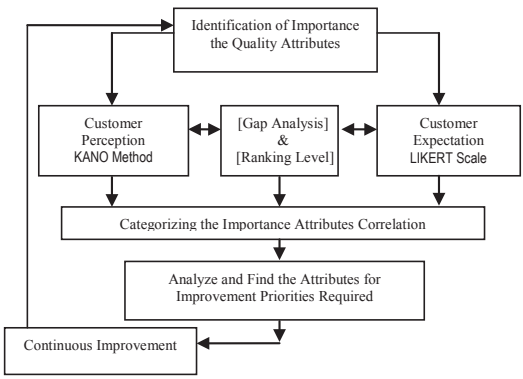

Fig. 1: Flows to Map the Attributes Required for Improvement Priorities.

IV. RESULTS AND DISCUSSION

Table 2 shows the results of quality attributes based on Kano method and the mean value of Likert scale towards each questions developed refer to SERVQUAL attributes.

A. Based on Kano Method

Based on Sauerwein category (see part II.A), the most important of service attributes are related to K15, K1, and K14. This is due to they are only having the 'Must-be' (M) attributes as the highest values (46.7%; 67%; 40% respectively). These questions are then followed by K16, K2, K3, K29, K12, and K13 since their percentages are close to 'One –dimensional' (O). The others, since they are in 'One-dimensional' , 'Attractive' and 'Indifferent' attributes, the priorities given as the last.

However, based on CS-DS classification [16] (see II part A.a), the priorities given should be to the service attributes which having the highest of negative values. Table 2 shows that the biggest 5 (the negative values) are K1, K15, K4, K14, and K2 (-0.667; -0.464; -0.367;-0.357; -0.333 respectively). This is meant that the first priorities for improvement should be given to K1 instead K15 (the opposite sequence if we use "M>A>O>I", where the first priorities given to K15 and then K1). While to find the priorities for improvement based on the lowest values using CAT, the service attributes for improvement are on K28, K27, K23, K22, K12, K9, and K3 where all of their CAT values are 0.033. These service attributes have ranking no 1 to 7. In this case, where the priorities are different, Sihombing et al., [21] proposed the ranking system based on the pairwise value using the reverse values (the functional value is reverse of the dysfunctional value and vice versa) as follows:

$$\begin{aligned} & F = \neg DF \quad or \quad DF = \neg F \\ \Leftrightarrow \quad & F = DF' \quad or \quad DF = F' \end{aligned}$$

Therefore, since Kano attribute is a pairwise of functional and dysfunctional value, then the ranking values as shown in column K of Table 2 determined by formula as follows:

$$K = Ln\left\{\frac{\frac{(F\times DF')^2+(DF\times F')^2}{(F+F')} + \frac{(F\times DF')^2+(DF\times F')^2}{(DF+DF')}}{2}\right\}$$

The results show that K3, K4, K15, K1, and K5 as the biggest 5, where the values are 2.99, 2.999, 3.001, 3.028, and 3.105 respectively. By using this approach, the ranking values are closed enough against CS-DS and "M>O>A>I" method. Based on the calculation results (Table 2), we can consider that CAT value for ranking is not exactly correct since the service attributes for improvement priorities is totally different compared to CS-DS and "M>O>A>I" method.

B. Based on Likert Scale

Based on the mean value which represent the customer expectation, the biggest 5 are on service elements L16, L15, L14, L17, and L22 where the values are 1.80 [*4.20*], 1.97 [*4.03*], 2.5 [*3.50*], 2.73 [*3.27*], and 2.87 [*3.13*]. Those service elements based on Likert scale parallel to the Kano method based on functional and dysfunctional questions such as K14, K15, K16, K12 and K6 respectively. Hence, the service attributes of K14, K15, and K16 is the most importance of the service attributes that close

enough to the ranking system for improvement priorities as suggested by Sauerwein [17,18]. Based on Likert scales, K1 or L 21 is on ranking 6.

C. Based on Cartesian Graph

Figure 2 shows the Cartesian graph between functional values against dysfunctional values. In this figure, the service attributes of K1, K15, K16, and K29 in the area DS↑, while K14 in the area DS↓ and K3 in the middle between DS↑ and DS↓. Hence, since the decreasing levels of expectations disconfirmation against goods and services should affect customer satisfaction [9], then the priorities for improvement should be given to area DS↑ where the service attributes are K1, K2, K3, K4, K7, K8, K15, K16, K17, K18, K20, K27,K28, and K29.

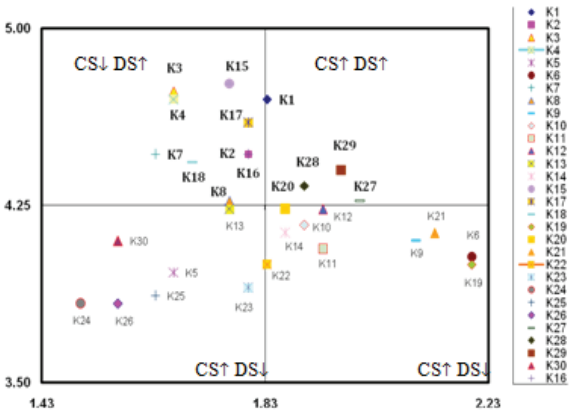

Fig 2: Graph of CS vs. DS.

D. Based on Significant Correlation (Pearson Correlation)

To find out the customer satisfaction based on the Kano correlation, Sihombing et al., [21] proposed the formula as follows:

$$\begin{aligned} &\{K_{Functional}\} \cap \{K_{Dysfunctional}\} = F_{Kano} \\ \Leftrightarrow\ &\{K_{Functional}\} \cap \{K_{Dysfunctional}\} - F_{Kano} = 0 \\ \Leftrightarrow\ &K_{Functional} \cap K_{Kano} = -\{K_{Dysfucntional} \cap F_{Kano}\} \\ \Leftrightarrow\ &-\{K_{Functional} \cap F_{Kano}\} = K_{Dysfunctional} \cap F_{Kano} \end{aligned}$$

This formula represents Table 3a & 3b , where almost of Kano criteria are correlated to functional characteristic. This is due to the total numbers of items which having significant correlations ($p<0.05$) among the elements of Servqual (e.g. Tangible in Functional = 44 items, while in Dysfunctional =8). Therefore, we compare Table 3a & 3b to Table 3c to find out which the improvement priorities required in which the

"Responsiveness" elements of Servqual are having 5 items of service required by customer as the biggest one compared to Tangibles, Reliability, Assurance and Empathy (Table 3c). Based on this result, the priorities improvements should be considered on what the items inside the "Responsiveness" criteria. Using the priority criteria based on "M>O>I>A" [17], the focus for improvement affect to the items of K1 and K29 (Must-be' attributes). Hence, since the improvement required is related to DS↑ and/or CS↓, then the priorities for improvement is as follows:

"M>O>A>I" ∩ Ranking Level of CS-DS Ranking Level of CAT ∩ Ranking Level of K ∩ Ranking Level of Expectation ∩ Graph "DS↑ vs. CS↓" ∩ "Correlation Kano vs. Functional" ∩ "Correlation Kano vs. Dysfunctional" ∩ "Correlation Kano vs. Kano" = K1.

In this point of views, elements of K1 which are having "Must-be" of Responsiveness attributes should be given priorities for improvement.

V. CONCLUSIONS

There are many methods to identify and analyze the customer requirements related to Voice of Customer (VOC). However, they are resulting with different answer, especially when it is used to find out what the priorities of improvement required to satisfy the customer. This study propose the Functional Deployment through the integration of quality attributes using Kano attributes with ranking level, graph, mean value and their items correlation between functional and dysfunctional.".

Based on the integration result, it is found that the "Must-be" attribute as the first priority required for improvement. This is consistent to Sauerwein et al., [17] who propose "M>O>A>I". However, if the service elements having more than 1 "Must-be" attribute, to determine the priorities should also consider others method such as the ranking levels, graph, and the correlation mapping as the justification. In this study, through the case of service provided by Event Organizer or Event Planning Management (EO), the priority of quality improvement required is on K1 "The electronic service to communicate with customer (K1)" of the service attributes of "Responsiveness

This study proves that the ranking level proposed by Sihombing et al., [21] is close enough to the ranking level using CS-DS method [16, 17]. However, further study is still required in order to depict the priority

improvement of quality attributes required by customer by integrating the results based on Kano method and Likert scale, especially about the combination or mixed between both approaches into the numeric parameter and graph.

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REFERENCES

[1] T. Gerson. , " Deployment of Customer Needs in the QFD using a Modified of Kano Model" . *Journal of Academy of Business and Economics,* Vol2 No.1, pp.103-115, 2003.

[2] D. Kanojia and D.R. Yadav, "Customer Satisfaction in Commercial Banks: A Case Study of Punjab National Bank." *International Journal of Trade and Commerce-IIARTC,* Vol. 1, No. 1, pp. 90-99, January-June 2012.

[3] D.K. Tse and P.C. Wilton, "Models of Consumer Satisfaction Formation: An Extension". *Journal of Marketing Research,* Vol.25 No.2, pp.204-212, 1988.

[4] P. Kotler, *Marketing Management.* 10th Ed. New Jersey: Prentice-Hall, 2003.

[5] W.L. Wilkie, *Consumer Behavior*, 2nd ed. New York: Wiley, 1990

[6] J.F. Engel, R.D. Blackwell,. and P.W. Miniard, *Consumer Behavior.* Dryden Press, Hinsdale, 1990

[7] D.A Collier, "Modelling the Relationships between Process Quality Errors and Overall Service Process Performance." *International Journal of Service Industry Management*, Vol. 6 No. 4, pp. 4-19, 1995.

[8] J.K. Chen and Y.C. Lee , "To Categorize the Quality Attribute – A New Method." Proceedings of Business and Information, Vol. 4, ISSN 1729-9322, 2007. *International Conference on Business and Information,* July 11-13, 2007, Tokyo, Japan.

[9] S. McQuitty, A. Finn and J.B. Wiley, "Systematically Varying Consumer Satisfaction and its Implications for Product Choice." *Academy of Marketing Science Review,* Vol. 24, No. 10, 2000. Available at: www.amsreview.org/theory/mcquitty10-00.html

[10] K. Matzler and H.H. Hinterhuber, "How to Make Product Development Projects More Successful by Integrating Kano's Model of Customer Satisfaction into Quality Function Deployment." *Technovation*, Vol.18 No.1, pp.25-38, 1988.

[11] C. Kultanan, H.A Crostack and R. Refflinghaus, "Implementation of Kano Methodology through Various Stakeholder Requirements." *Proceedings of the 7th Asia Pacific Industrial Engineering and Management System Conference 2006*, 17-20 December 2006, Bangkok, Thailand, pp.855-863.

[12] M. Zelma " The Product Quality of Polish Ski-Resorts: A Case Study of Silesian Skiers' Requirements: Satisfaction, and Complaint." *Tourism,* Vol.56 No.1, pp.41-589, 2008.

[13] Grigoroudis, E., Politis, Y., Spyridaki, O., and Siskos, Y. (2002): Modelling Importance Preferences in Customer Satisfaction Surveys. *56th Meeting of the European Working Group, Multiple Criteria Decision Aiding*, Coimbra, October 3-5, 2002.

[14] E. Grigoroudis and O. Spyridaki ," Derived and Stated Importance Customer Satisfaction Surveys." *Operational Research*, Vol.3 No.3, pp.229-247, 2003.

[15] N. Kano, N. Seraku, F. Takahashi. and A. Tsuji, "Attractive Quality and Must-be Quality." Hinshitsu *The Journal of the Japanese Society For Quality Control,* pp. 39-48, April 1984

[16] C. Berger, R. Blauth, D. Boger, C. Bolster, G. Burchill, W. DuMouchel, F. Pouliot, R. Richter, A. Rubinoff, D., Shen, M. Timko and D. Walden , "Kano's Methods for Understanding Customer-Defined Quality." *Center for Quality Management Journal*, Vol. 2 No.4, pp. 3-35, 1993.

[17] E. Sauerwin, F. Bailom, K. Matzler and H.H. Hinterhuber , "The Kano Model: How to Delight Your Customers." *International Working Seminar on Production Economic*s, Innsbruck/Igls/Austria, February 19-23 1996, pp.313 -327, 1996.

[18] E. Sauerwein, " Experiences with the Reliability and Validity of the Kano-Model: Comparison to Alternate Forms of Classification of Product Development. " Transactions of the *11th Symposium on QFD*, QFD Institute, Novi, MI, 12-18 June, 1999.

[19] C. Zanger and G. Baier, "Händlerzufriedenheit mit Telekommunikationsgroßhändlern – Eine Empirische Untersuchung zum Methodenvergleich zwischen Conjoint – Analyse und Kano – Modell." in Trommsdorff, V. (Ed.), *Handelsforschung* 1998/99, Gabler Verlag, Wiesbaden, pp. 407-432.

[20] A. Parasuraman, V. Zeithaml and L.L. Berry, "SERVQUAL: Multiple-Item Scale for Measuring Customer Perception of Service Quality." *Journal of Retailing,* Vol. 67 No.1, pp.12-40, 1988.

[21] H. Sihombing, M.Y. Yuhazri, S.H. Yahaya, M.Z.A. Yuzrina and A.A.Z. Azniza (2012) "Revisited the Importance and Performance Analysis (IPA) and KANO Model for Customer Satisfaction Measurement. " *Global Engineers and Technologists Review*, No. 2 Vol.1, pp. 40-57, 2012.

APPENDIX:

Table 3a: Correlation of Kano vs. Dysfunctional.

KANO vs. DYSFUNCTIONAL

	K26	K19	K15	K16	K25	K27	K22	K20	K21	K12	K7	K8	K9	K2	K6	K1	K3	K4	K5	K18	K17	K29	K28	K14	K11	K10	K23	K24	K30	K13
	A	I	M	M	A	I	A	A	I	A	O	I	O	M	I	M	O	O	A	O	O	M	O	M	I	I	I	A	A	M
KFQ26	.634(**)	.422(*)		.483(**)	.505(**)		.469(**)	.585(**)	.490(**)		.374(*)			.403(*)		.366(*)				.404(*)	.538(**)						.428(*)	.509(**)		.376(*)
KFQ19		.723(**)		.375(*)				.505(**)	.446(*)												.403(*)									
KFQ15				.423(*)		.439(*)		.426(*)	.393(*)						.411(*)	.417(*)	.570(**)	.495(**)	.479(**)		.512(**)		.597(**)					.370(*)	.423(*)	.403(*)
KFQ16				.463(**)			.450(*)	.561(**)	.472(**)						.415(*)		.420(*)											.492(**)		.408(*)
KFQ25	.536(**)	.496(**)			.623(**)		.651(**)	.609(**)	.496(**)					.508(**)		.417(*)	.441(*)				.386(*)						.425(*)	.667(**)		
KFQ27				.378(*)		.725(**)			.474(**)	.385(*)						.362(*)			.373(*)		.400(*)		.478(**)							.376(*)
KFQ22							.620(**)	.525(**)	.645(**)												.386(*)		.406(*)				.415(*)			
KFQ20		.481(**)		.534(**)			.566(**)	.628(**)	.536(**)					.419(*)			.392(*)													
KFQ21				.543(**)			.508(**)	.454(*)	.725(**)					.393(*)			.400(*)						.362(*)							.368(*)
KFQ12				.428(*)	.413(*)				.505(**)																					.386(*) .526(**)
KFQ7			.405(*)	.398(*)	.417(*)	.504(**)			.570(**)	.566(**)				.414(*)	.537(**)	.526(**)	.412(*)	.377(*)	.529(**)		.533(**)	.501(**)	.473(**)		.502(**)	.432(*)			.543(**)	
KFQ8					.431(*)	.426(*)	.555(**)	.494(**)				.432(*)		.574(**)	.428(*)	.382(*)	.395(*)		.524(**)	.505(**)			.652(**)				.389(*)	.414(*)		
KFQ9					0.347			.560(**)					.537(**)														.429(*)			
KFQ2			.529(**)						.431(*)									.368(*)												
KFQ6							.391(*)		.365(*)	.398(*)					.627(**)			.470(**)							.438(*)					
KFQ1			.374(*)																											
KFQ3			.393(*)		.455(*)		.363(*)	.515(**)													.418(*)									.418(*)
KFQ4	.391(*)			.568(**)	.417(*)	.453(*)	.483(**)	.378(*)	.387(*)	.412(*)		.412(*)		.373(*)	.488(**)	.415(*)			.436(*)			.472(**)	.388(*)				.384(*)	.426(*)	.425(*)	.507(**)
KFQ5	.365(*)				.368(*)		.459(*)	.413(*)	.367(*)	.379(*)				.481(**)	.570(**)	.406(*)	.462(*)	.558(**)	.744(**)	.505(**)	.626(**)		.570(**)	.378(*)	.465(**)			.450(*)	.429(*)
KFQ18		.444(*)						.497(**)	.474(**)					.526(**)	.554(**)				.413(*)	.414(*)	.478(**)							.382(*)	.444(*)
KFQ17		.390(*)	.362(*)				.361(*)	.395(*)	.443(*)	.412(*)					.551(**)				.516(**)	.400(*)	.454(*)								.498(**)
KFQ29					.370(*)														.371(*)				.458(*)							
KFQ28					.413(*)			.580(**)											.428(*)		.468(**)		.549(**)			.372(*)		.364(*)	.399(*)
KFQ14	.447(*)			.498(**)	.370(*)											.475(**)	.386(*)				.501(**)		.475(**)						.413(*)
KFQ11				.398(*)	.504(**)			.371(*)							.401(*)				.432(*)		.428(*)		.504(**)		.550(**)			.430(*)	
KFQ10					.560(**)			.390(*)															.476(**)		.444(*)	.388(*)	.381(*)		.403(*)	
KFQ23				.449(*)	.410(*)	.439(*)	.400(*)	.726(**)													.363(*)						.650(**)			
KFQ24	.516(**)	.453(*)		.395(*)	.526(**)		.598(**)	.594(**)	.588(**)					.407(*)		.388(*)				.399(*)	.409(*)						.523(**)	.726(**)		
KFQ30					.517(**)			.563(**)	.371(*)						.365(*)	.366(*)			.515(**)		.732(**)		.516(**)		.371(*)		.453(*)		.615(**)	.565(**)
KFQ13				.438(*)	.498(**)												.503(**)	.427(*)			.424(*)		.492(**)						.478(**)	

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

Table 3b: Correlation of Kano vs. Functional.

KANO vs. FUNCTIONAL

	K26	K19	K15	K16	K25	K27	K22	K20	K21	K12	K7	K8	K9	K2	K6	K1	K3	K4	K5	K18	K17	K29	K28	K14	K11	K10	K23	K24	K30	K13
	A	I	M	M	A	I	A	A	I	A	O	I	O	M	I	M	O	O	A	O	O	M	O	M	I	I	I	A	A	M
KFQ26			-.419(*)									.389(*)												-.420(*)		.461(*)			.378(*)	
KFQ19																														
KFQ15	.410(*)		.556(**)		.474(**)							.580(**)	.424(*)	.383(*)		.472(**)						.555(**)		.498(**)		.551(**)		.499(**)	
KFQ16																								-.381(*)						
KFQ25			.519(**)							.568(**)		.388(*)	.411(*)			.427(*)														
KFQ27																														
KFQ22																														
KFQ20																														
KFQ21								.401(*)																						
KFQ12	.417(*)															.417(*)		.392(*)												
KFQ7			-.370(*)									.431(*)						-0.292				.596(**)		-.395(*)	.509(**)	.651(**)		.492(**)		
KFQ8	.637(**)		-.390(*)		.413(*)					-.379(*)		.489(**)		.411(*)		.437(*)		.429(*)		.370(*)		.455(*)		-.423(*)		.380(*)		.531(**)	.523(**)	
KFQ9					.423(*)					-.381(*)	.497(**)	.572(**)	.537(**)	.555(**)	.464(**)	.396(*)						.370(*)				.387(*)		.401(*)		
KFQ2			-.457(*)							.525(**)	.398(*)	.412(*)	.458(*)		.389(*)	.553(**)		.440(*)			.432(*)				.405(*)	.562(**)		.368(*)	.538(**)	
KFQ6					.440(*)								.396(*)									.382(*)								
KFQ1	.535(**)		.719(**)		.606(**)					.691(**)	.642(**)	.551(**)	.411(*)	.568(**)	.583(**)	.779(**)		.623(**)	.587(**)	.411(*)	.637(**)	.599(**)		.496(**)	.580(**)	.516(**)		.676(**)	.677(**)	
KFQ3	.712(**)		.589(**)		.583(**)					.582(**)	.444(*)	.619(**)	.392(*)	.558(**)	.485(**)	.701(**)		.600(**)	.431(*)	.395(*)	.475(**)	.629(**)		.481(**)	.529(**)	.503(**)		.605(**)	.563(**)	
KFQ4	.648(**)		.471(**)		.616(**)					.517(**)	.413(*)	.471(**)	.598(**)	.438(*)	.519(**)	.617(**)		.695(**)	.532(**)	.371(*)		.668(**)		.408(*)	.516(**)	.431(*)		.571(**)	.494(**)	
KFQ5	.361(*)																					.424(*)								
KFQ18																.422(*)										.548(**)			.467(**)	.432(*)
KFQ17															.422(*)	.483(**)				.362(*)						.383(*)			.438(*)	
KFQ29					.530(**)						.495(**)	.482(**)		.395(*)	.438(*)	.411(*)						.584(**)				.488(**)			.463(**)	
KFQ28																											.489(**)			
KFQ14			.444(*)								.476(**)		.508(**)						.415(*)		.391(*)			.798(**)		.425(*)			.577(**)	
KFQ11	.518(**)										.521(**)							.404(*)				.480(**)								
KFQ10	.420(*)										.450(*)	.439(*)				.414(*)			.368(*)	.385(*)		.408(*)		-.395(*)		.415(*)			.512(**)	
KFQ23																											.407(*)			
KFQ24																														
KFQ30	.378(*)		-.394(*)																										.416(*)	
KFQ13																								-.448(*)		.462(*)			.612(**)	.418(*)

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

Table 3c: Correlation of Kano vs. Kano.

KANO vs. KANO

	K26 A	K19 I	K15 M	K16 M	K25 A	K27 I	K22 A	K20 A	K21 I	K12 A	K7 O	K8 I	K9 O	K2 M	K6 I	K1 M	K3 O	K4 O	K5 A	K18 O	K17 O	K29 M	K28 O	K14 M	K11 I	K10 I	K23 I	K24 A	K30 A	K13 M
KFQ26	1		.439(*		.665(**						.412(*)	.394(*)		.485(**		.493(**		.472(**	.385(*)	.444(*	.463(**	.627(**							.389(*)	.504(**
KFQ19		1			.400(*		.373(*	.565(**							.366(*	.467(**				.370(*	.379(*							.397(*)		
KFQ15	.439(*		1		.371(*				.600(**		.440(*)	.391(*)		.382(*		.456(*		.408(*	.457(*)		.609(**		.554(**	.508(**				.534(**	.510(**
KFQ16				1				.468(**									.419(*)													
KFQ25	.665(**	.400(*	.371(*		1		.364(*	.397(*			.508(**			.586(**		.509(**				.452(*		.713(**						.496(**		
KFQ27						1										.373(*						.628(**		.453(*		.456(*)				
KFQ22		.373(*			.364(*		1	.678(**	.562(**																	.547(**	.635(**			
KFQ20		.565(**			.397(*		.678(**	1	.607(**					.490(**	.542(**					.517(**						.456(*)	.642(**			
KFQ21			.468(**				.562(**	.607(**	1					.409(*						.424(*	.389(*		.380(*			.684(**	.519(**			
KFQ12		.600(**								1	.508(**	.399(*)	.399(*		.370(*	.525(**		.426(*			.437(*		.386(*)					.517(**	.650(**	
KFQ7	.412(*		.440(*		.508(**					.508(**	1	.362(*		.416(*	.414(*	.521(**					.477(**								.410(*	
KFQ8	.394(*		.391(*							.399(*	.362(*	1		.663(**		.527(**		.551(**			.364(*)		.440(*)					.417(*)		
KFQ9										.399(*		.1			.469(**	.471(**					.455(*)									
KFQ2	.485(**		.382(*		.586(**			.490(**	.409(*)		.416(*)	.663(**		1	.616(**	.508(**			.523(**	.484(**	.383(*		.364(*)				.430(*)	.413(*)		
KFQ6		.366(*					.542(**		.370(*)	.414(*)		.469(**	.616(**	1	.533(**		.407(*	.556(**	.538(**				.557(**	.551(**			.437(*)		
KFQ1	.493(**	.467(**	.456(*		.509(**	.373(*)			.525(**	.521(**	.527(**	.471(**	.508(**	.533(**	1	.370(*	.582(**	.509(**	.418(*	.569(**	.563(**			.373(*	.499(**			.491(**	.445(*)
KFQ3				.419(*												.370(*	1	.462(*				.590(**					.388(*)			
KFQ4	.472(**		.408(*						.426(*)		.551(**				.407(*	.582(**	.462(*	1	.477(**		.441(*	.367(*		.448(*)	.473(**			.470(**		
KFQ5	.385(*		.457(*											.523(**	.556(**	.509(**		.477(**	1	.572(**	.602(**		.512(**	.536(**	.646(**	.488(**		.486(**	.384(*)	
KFQ18	.444(*	.370(*			.452(*			.517(**	.424(*)					.484(**	.538(**	.418(*			.572(**	1	.430(*	.425(*					.427(*)	.505(**		
KFQ17	.463(**	.379(*	.609(**						.389(*)	.437(*)				.383(*		.569(**		.441(*	.602(**	.430(*	1		.366(*	.603(**	.462(*			.577(**	.484(**	
KFQ29	.627(**				.713(**						.477(**	.364(*)	.455(*			.563(**		.367(*		.425(*		1				.456(*		.449(*)		
KFQ28						.628(**			.380(*)								.590(**		.512(**		.366(*		1				.398(*)		.453(*)		
KFQ14		.554(**								.386(*)		.440(*)		.364(*				.448(*	.536(**		.603(**			1	.503(**	.425(*			.607(**		
KFQ11		.508(**			.453(*										.557(**	.373(*		.473(**	.646(**		.462(*			.503(**	1	.683(**			.516(**		
KFQ10															.551(**	.499(**			.488(**			.456(*		.425(*	.683(**	1			.486(**		
KFQ23					.456(*	.547(**	.456(*)	.684(**												.427(*			.398(*				1	.556(**			
KFQ24		.397(*			.496(**		.635(**	.642(**	.519(**					.430(*			.388(*		.505(**							.556(**	1			
KFQ30	.389(*		.534(**							.517(**	.417(*)			.413(*	.437(*	.491(**		.470(**	.486(**		.577(**	.449(*	.453(*	.607(**	.516(**	.486(**			1	.543(**	
KFQ13	.504(**		.510(**							.650(**	.410(*)					.445(*			.384(*)		.484(**							.543(**	1	

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

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

Table 2: Results of Kano vs. Likert.

ServQual Dimensions	KANO [The company provides]		KANO RANKING CS-DS	KANO RANKING CAT	KANO RANKING K	KANO α Cronbach	LIKERT [How do you feel , if company]	LIKERT RANKING Mean	LIKERT RANKING RANK	LIKERT α Cronbach
TANGIBLE	**K26**. [ ] stall concept service for customers' event.	**A** [50%]	**29** [0.464]	**29** [0.3]	**16** [3.126]		**L5**. [ ] provides stall concept for event?	4.23	**19**	
	K19.**[ ]** emcee (MC) for customers' event	**I** [50%]	**23** [0.207]	**26** [0.233]	**30** [3.2]		**L12**. [ ] provide Emcee (MC) for events?	3.97	**13**	
	K15.**[ ]** the mixed dishes choices menu (Malay, Western, Chinese, Indian, etc.)	**M** [46.7%]	**2** [-0.464]	**15** [0.1]	**3** [3.001]		**L15**. [ ] provides merely of single dishes choices attributes? (Malaya, Western, Chinese, Indian, etc.)	1.97 *[4.03]**	**2**	
	K16. [ ] customers' choices to the event concept regarding culture attributes (Malay, Chinese, Indian, Western, etc)	**M** [30%] **O** [30%]	**8** [-0.172]	**9** [0.067]	**9** [3.073]	**F=0.894 DF=0.768 [0.808] K =0.772**	**L14**. [ ] provides the services merely traditional choices event concept? (Malaya, Western, Chinese, Indian, etc.)	2.50 *[3.50]**	**3**	**0.540 [*0.673*]**
	K25. [ ] free tea corner for customers' event.	**A** [46.7%]	**28** [0.464]	**25** [0.233]	**20** [3.136]		**L6**. [ ] provides the tea corner for customer event ?	4.40	**22**	
	K27. [ ] dome set to serve food for customers' event.	**I** [30%] **A** [27%]	**18** [0.036]	**2** [0.033]	**21** [3.139]		**L4**. [ ] provides dome set to serve the foods?	3.97	**14**	
	K22. [ ] free Karaoke set and Live Band for customers' event	**A** [37%] **I** [33%]	**25** [0.267]	**4** [0.033]	**24** [3.155]		**L10**. [ ] provides the Karaoke set and Live Band for the events provided?	3.93	**11**	
	K20. [ ] free entertainment equipment for customers' event.	**A** [33%]	**22** [0.261]	**12** [0.1]	**17** [3.126]		**L11**. [ ] provides entertainment equipment for the customer?	4.10	**15**	
	K21. [ ] the custom rental customers' event.	**I** [43%]	**20** [0.103]	**24** [0.2]	**27** [3.175]					
	K12. The employees are proper attired to serve customer (smart, good looking, well dress, etc.)	**A** [27%] **M** [27%]	**14** [0]	**5** [0.033]	**19** [3.136]	**F=0.728 DF=0.547**	**L17**. The employee is formal, firmly, and strictly in serving the customers in the event.	2.73 *[3.27]**	**4**	**0.653**
							L18. The employee hosts in the event are all women.	2.93 *[3.07]**	**7**	**0.764**
RELIABILITY	**K9**. The company need five (5) minutes to take action on food issued	**O** [30%] **I** [27%]	**9** [-0.115]	**6** [0.033]	**28** [3.176]	**F=0.514 DF=0.734 [0.262] K =0.563**	**L20**. The companies need more than five (5) minutes to take action on food issued in the event?	3.10 *[2.90]**	**8**	**0.679**
	K7. The customer service always fast response to attend and serve the customer	**O** [43%]	**19** [0.036]	**28** [0.233]	**5** [3.043]					
	K8. The company response to request of customers' email in one (1) hours	**I** [30%]	**12** [-0.034]	**11** [0.067]	**11** [3.105]					
RESPONSIVENESS	**K2**.The company have website to inform the service available & offered (Price, Extra Service, Location, Equipment)	**O** [43%] **M** [40%]	**5** [-0.333]	**23** [0.167]	**8** [3.073]		**L25**. The company service information regarding price, extra service, location, equipment are published in website?	4.60	**24**	
	K6. The company offers and promotes the service available /provided through newspaper, magazine, banner.	**I** [33%]	**13** [0]	**13** [0.1]	**29** [3.195]		**L22**. The company does not promote and provides the services information (i.e. newspaper, magazine, banner?	2.87 *[3.13]**	**5**	
	K1. Electronic service (Email, Tel, Fax) to communicate the service offered for customer	**M** [67%]	**1** [-0.667]	**30** [0.467]	**4** [3.028]		**L21**. [ ] response in one (1) hours to answer the request from customer (email and fax).	2.87 *[3.13]**	**6**	
	K3. [ ] visiting service for face-to-face direct meeting with customer to offers and discusses the services required. [visit the customer]	**O** [43%] **M** [40%]	**17** [0.036]	**7** [0.033]	**1** [2.99]		**L24**. [ ] direct face-to-face service to meet the customer?	4.60	**25**	
	K4. [ ] on-site direct service to the customer [service for customer to visit the company]	**O** [47%]	**3** [-0.367]	**17** [0.1]	**2** [2.999]	**F=0.879 DF=0.865 [0.698] K =0.839**				**0.342 [*0.398*]**
	K5 [ ] 24 hour free on line service	**A** [40%]	**27** [0.429]	**19** [0.133]	**18** [3.131]		**L23**[ ] does not provide 24 hour free service line?	3.30	**9**	
	K18. The company help customer to find and booked the event locations.	**O** [40%]	**15** [0.033]	**14** [0.1]	**7** [3.063]		**L13**. The company helps you as the customer to find and provide the location for events?	4.47	**23**	
	K17. Customers' choices towards event location (Hotel, House, Hall, Gender, etc.)	**O** [43%]	**7** [-0.027]	**22** [0.167]	**6** [3.045]					
	K29. The company charges 20% and 50% of payment for booking fee for at least 1 month and 2 week before the event . While 100% payment , it should be completed in 1 week before the event.	**M** [30%] **O** [30%]	**6** [-0.25]	**20** [0.167]	**13** [3.110]		**L2**. The company charges you 20% payment for booking fees?	3.47	**10**	
	K28[ ] the credit card payment system.	**O** [27%] **I** [27%]	**16** [0.035]	**1** [0.033]	**15** [3.114]		**L3**. [ ] the credit card payment system, beside the cash payment system?	4.23	**20**	
ASSURANCE	**K14**. The employee are good enough to give clearly explanation to customer regarding the services	**M** [40%]	**4** [-0.357]	**16** [0.1]	**23** [3.142]	**F=0.450 DF=0.374**	**L16**. The employees lack to explain the services provided and offered?	1.80 *[4.20]**	**1**	**0.543**
EMPATHY	**K11**. [ ] Suggestion and comment column in the company website.	**I** [43%]	**21** [0.107]	**27** [0.233]	**25** [3.161]		**L19**. The company website provides the column for suggestion/ comment/ complaint	3.97	**12**	
	K10 [ ] Suggestion box for customer suggestion and complaint	**I** [37%]	**11** [-0.069]	**18** [0.133]	**22** [3.142]					
	K23. [ ] Fee VIP set of table, red carpet, and equipment for customers' event	**I** [37%] **A** [33%]	**24** [0.233]	**3** [0.033]	**26** [3.161]	**F=0.814 DF=0.746 [0.528] K =0.656**	**L8**. [ ] the red carpet for VIP	4.13	**16**	**0.668**
							L9. [ ] provides VIP set of table and equipment to customer.	4.17	**17**	
	K24. [ ] Fee photography service for customers' event (100 shoots, exclude photo printed)	**A** [47%]	**30** [0.467]	**21** [0.167]	**14** [3.113]		**L7** . [ ] the photography service for customer.	4.37	**21**	
	K30. [ ] and offers free design service for card invitation required by customers.	**A** [37%]	**26** [0.321]	**8** [0.067]	**10** [3.095]		**L1**. The company's services includes the service provided to design the invitation card?	4.17	**18**	
	K13. The employees are friendly to serve the customer (warm, talkative, friendship)	**M** [27%] **O** [27%] **I** [23%]	**10** [-0.074]	**10** [0.067]	**12** [3.111]	**F=0.436 DF=0.402**				