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The Quantification of Two Grading Elements in Satisfaction based on ServQual Approach by Using IPA and Kano Method: Automotive Industry

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Abstract: This study highlights the integration of the ServQual model, Importance Performance Analysis (IPA), and the Kano method. Service Quality or ServQual is an approach to manage business processes to ensure full satisfaction of the customers and quality of service provided in preceding customer satisfaction. The 5 elements of ServQual are used to develop the survey questionnaire. At the same time, the IPA model is needed to measure service quality, not only the performance of an item but also the importance of the determining factor in satisfaction to the respondent. The Kano method is employed to identify the quality attributes of products or services based on the functional and dysfunctional attributes. In order to know what the customer perceptions and satisfaction levels of the services are, this study involved respondents from the service center of the automotive industry. Through the survey questionnaires and data analysis, the results showed that in Kano, facilities of the service center while in IPA, the security level of service center itself are the major elements that need to be considered. Both of these elements are the improvement needed by the company to look into details to increase and grab more attention towards customer satisfaction.

Key Words: ServQual, IPA, Kano method, Customer satisfaction

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INTRODUCTION

'Customer satisfaction' is a highly used marketing term that rates a company's products and services provided accordingly to the level of customer's expectation. It is a calculation of a certain percentage of customer's testimony with respect to the services or products, whether or not it reaches the set target goal of the company. Customer satisfaction is often used as a Key Performance Indicator (KPI) as well as a part of the Balanced Scorecard and is regarded as what differentiates a niche business in a demanding market. Within an organization, customer gratification ratings can make a difference. They focus on the importance of employees' understanding of the product or services to meet the customers' expectations. Furthermore, the ups and downs in the rating play an important role in sales and profits, a drop in the rating is a dissatisfied customer. A satisfied customer brings about a loyal customer, which leads to a positive, and highly effective verbal marketing. The ability to reach the extent of getting loyal customers depends on a company's effectiveness in measuring the level of satisfaction. With that being said, customer satisfaction is posed as a challenge on how a company can deliver quality services to thrive and survive in current competitive age. This study is carried out to identify and investigate customer satisfaction of manufacturing industries by collecting data and information.

THEORITICAL APPROACH

ServQual model

ServQual is a service quality framework, developed in the eighties by Zeithaml, Parasuraman and Berry (1990) which aims to measure the scale of quality in the service sectors. ServQual was originally measured on 10 aspects of service quality towards reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer, and tangibility, in order to measure the gap between customer expectations and experience. These dimensions are then combined and the

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fivefold ServQual dimensions are R-A-T-E-R (table 1) (Brooks, Lings & Botschen, 1999; Chaston, 1994; Edvardsson, Larsson & Setterlind, 1997; Lings & Brooks, 1998; Reynoso & Moores, 1995; Sahney, Banwet & Karunes, 2004).

Table 1: The key Service Dimensions (Parasuraman, Zeithaml & Berry, 1994)

Servqual Elements	Definitions of the elements
Responsiveness	Willingness to help customers and provide prompt service.
Assurance	Knowledge and courtesy of employees and their ability to convey trust and confidence.
Tangibles	Appearance of physical facilities, equipment, personnel, and communication materials.
Empathy	Caring, individualized attention the firm provides its customers.
Reliability	Ability to perform the promised service dependably and accurately.

The ServQual model is dependent on three major bases:

- The 5 Gaps: There are 5 Gaps that create a void between the customer's expectations and the service delivered by the service provider. Organizations should measure, manage and minimize these 5 Gaps for successfully marketing their service.
- Causes & Solutions to Gaps: Identifying the causes and appropriate solutions are very crucial to minimize that void.
- The Key Service Dimensions: The aspects that should be stressed upon so as to allow the service to be adopted by targeted segments.

ServQual is applied in many sectors including retail banking, though in spite of all that has its own downs. Doubts are on to the usefulness of the scale as a diagnostic tool in monitoring and managing service development, the adequateness of its dimensionality, and how well the scale can be used to predict service outcomes such as overall satisfaction and switching behaviour. However, ServQual is found to hold a standard measure of satisfaction within service industries (Zhou, Zhang & Xu, 2002).

Importance Performance Analysis (IPA)

The Importance Performance Analysis (IPA) constitutes an approach to the measurement of customer satisfaction which allows for a simple and functional identification of both the strong and the weak aspects, or improvement areas, of a given service. Taking both the importance assigned by users to all relevant aspects of a given service and the perceived performance of the establishment in providing the service. The IPA is graphically presented on a grid divided into four quadrants, that is illustrated as the IPA grid (figure 1).

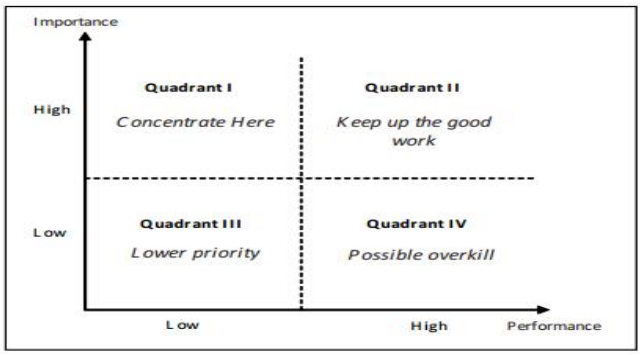

Figure 1. Importance performance analysis grid

Then, by measuring customer importance and satisfaction performance, the model develops specific product relations based on attributes of technological priorities. The quadrants were according to the average of importance and satisfaction (performance) to differentiate in IPA model. The four-quadrants and implication of IPA are shown in table 2.

Table 2: Quadrant and implication of IPA

Quadrants	Implication
Quadrant 1 (Concentrate here)	Attributes are perceived to be very important to respondents, but performance levels are fairly low. This suggest that improvement efforts should be concentrated here.
Quadrant 2 (Keep up the good work)	Attributes are perceived to be very important to respondents, and at the same time, the organization seems to have high levels of performance in these activities. The message here is to keep up the good work.
Quadrant 3 (Lower priority)	Attributes here are rated as having low importance and low performance. Although performance levels may be low in this cell, managers should not be overly concerned, since the attributes in this cell are not perceived to be very important. Limited resources should be expended on this low priority cell.
Quadrant 4 (Possible over kill)	This cell contains attributes of low importance, but where performance is relatively high. Respondents are satisfied with the performance of the organization, but managers should consider present efforts on the attributes of this cell as being superfluous/unnecessary.

Kano model

The result gained from the Kano Model analysis is a product feature that gained from the highest customer satisfaction under development effort constraints. If there are any continuations expected from the development, resulting feature must be broken down into several releases (versions). In using the process, product releases can be molded in a way that customer dissatisfaction may be avoided by focusing on the Must-Be and One-Dimensional feature, followed by further enhancement of other features accordingly as resources allow as illustrated in figure 2.

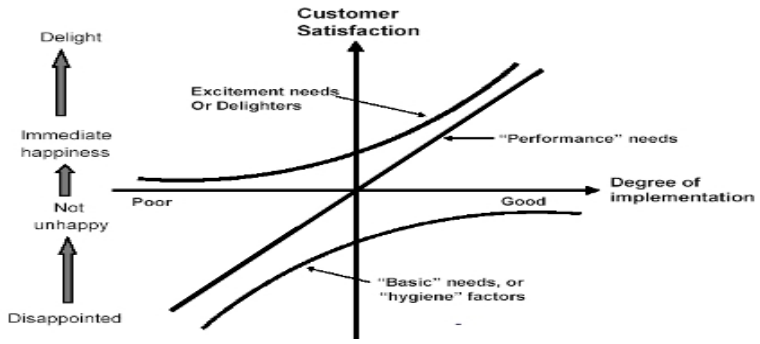

Figure 2. Kano model (Kano, Seraku, Takahashi & Tsjui, 1984)

Kano model connects requirements, which are product attributes, response to needs, and customer satisfaction. The final customer satisfaction is classified into 3 categories:

- Must Have ("Basic needs") - The one classification to have with or without being specified. For example, every car must have brakes, and every coffee must be included with water.
- Performance requirements ("Linear") - What customer specified to have, and satisfaction is proportional to the level of performance and quality. What's important is the customer's feedback on these functions.
- Delighters ("exciters") - Much like basic needs, this type of requirements are not necessarily expressed. This is what's always defined as a pleasant surprise that is also an important source of satisfaction. Due to that, it is not considered as a priority, but advisable as a strategy.

The construction of Kano model revolves around questionnaires regarding each and every product attribute, including functional form questions (capturing the customer response on certain product attributes) and dysfunctional form questions (capturing absent attributes). By using Kano evaluation table as the base (table 3), questionnaires are distributed to the customers to gather individual perception of a product attribute. The product attributes' final classification is then constructed from the results of all said respondents.

Table 3: Kano evaluation

Customer Survey Responses	Dysunctional Question Answer				
	1. Like	2. Must Be	3. Neutral	4. Live With	5. Dislike
	Functional Question Answers				
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

RESEARCH METHODOLOGY

The quality attributes of ServQual dimension (table 4) (Gabbie & O'neill, 1996) is used to identify and investigate the car service industry's customer satisfaction that required the concept of IPA (Importance-Performance Analysis) to identify the strengths and weaknesses of quality attributes related to the service given by the car service industry from the customers' viewpoints.

The implementation integrative of the IPA and the Kano's model is used to evaluate the priorities of service related to what's required by the customer. At this point, the integration of both conceptual approaches would come out with the gaps of satisfaction related to the disconfirmation theory. The asymmetric Kano model (related to non-linear satisfaction attributes) towards the linear satisfaction attributes of IPA (based on a Likert scale) is used as the customer satisfaction improvement required against the quality of service provided.

Table 4: Kano evaluation

Servqual Elements	Questionnaires	Question number in Questionnaire
Assurance	• Assurance that the rate charge is fair provided is enough for customers.	1-4
	• Assurance that the location is suitable and parking lot is enough.	
Tangible	• Visually appealing external appearance of the staff (clean & neat).	5-8
	• Having suitable places and facilities for effective services.	
	• The facilities are functioning well.	
	• Cleanliness & safety of buildings, places and facilities.	
Reliability	• Consistence in quality of services given.	9-12
	• Reliability and dependability (the degree of trust in service).	
	• Attention to details of the service delivery by the staff members.	
	• Ease of contact (accessible at any time) of the staff members.	
Responsiveness	• Competence (knowledge and skill) of the staff members.	13-16
	• Service given tally with company's advertisement.	
	• The service system for booking, registration and payment is easy and reliable.	
Empathy	• Staff members have knowledge, polite and necessary service skills.	17-20
	• Approachability (friendliness and warmth) of staff members.	
	• Staff members pay attention to individual needs.	

RESULTS AND ANALYSIS

Kano model results

The Kano question identifies the responsiveness feeling according to the parameter given in ServQual approach, then the value of the attributes for Kano-functional results (satisfaction) can be increased by meeting a service requirement or whether fulfilling this service requirement can merely prevent the customer from being dissatisfied. In order to gain the data ranking for Kano, the customer satisfaction coefficient states are used (Sauerwein, Bailom, Matzler & Hinterhuber, 1996).

Table 5: Value of Kano ranking

RANK	Kano (Services)
6	1. Location
4	2. Parking lots
2	3. Rate charged
1	4. Facilities
9	5. Staff well dress & neat
20	6. Comfort of Waiting room
19	7. Waiting room facilities
18	8. Surrounding clean and tidy
17	9. Services given consistent in quality
11	10. Tight of security level
8	11. Helpfulness of staff
15	12. Staff easily available
16	13. Staff well trained or not
12	14. Service tally with their advertisement
7	15. Booking system easy and reliable
3	16. Registration & payment is easy & fast
13	17. Staff polite and knowledgeable
14	18. Staff effective & friendly
5	19. Service center provide warm feeling to me
10	20. Staff pays attention to my need

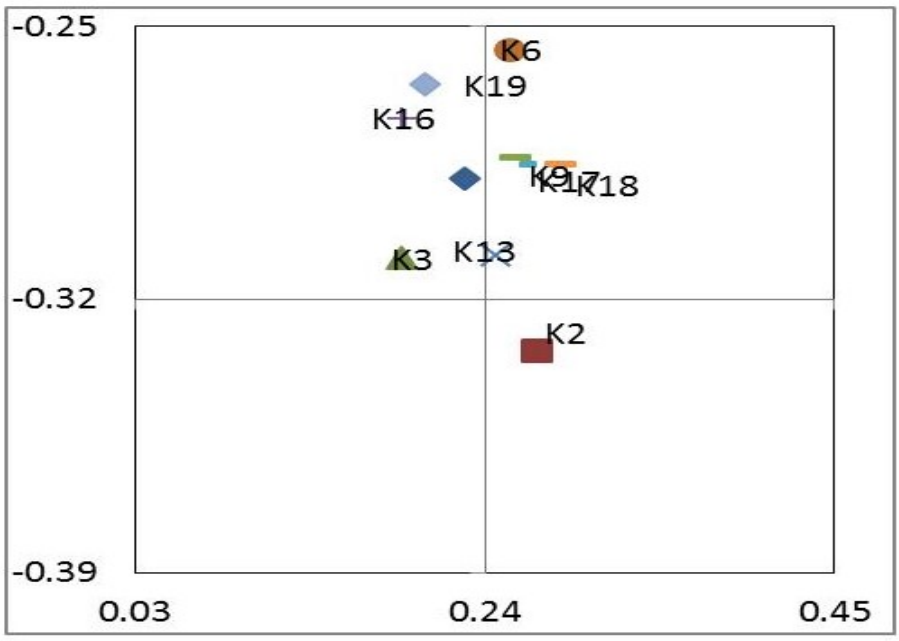

Figure 3. Results of graphical Kano alanylis

The results (table 5 & figure 3) show that there are three factors that need to be prioritized first in making improvements and the data of correspondent of each category can be clearly seen in table and figure above. Based on the ranking, the top three factors that need to be considered as the first priorities are:

1. Facilities of the service centre
2. Rate charge of the service centre should be more relevant
3. Registration and payment should be easier and reliable.

IPA results

Table 6: Value of IPA ranking

RANK	Services
19	1. Location
17	2. Parking lots
16	3. Rate charged
14	4. Facilities
18	5. Staff well dress & neat
13	6. Comfort of Waiting room
15	7. Waiting room facilities
8	8. Surrounding clean and tidy
6	9. Services given consistent in quality
1	10. Tight of security level
11	11. Helpfulness of staff
9	12. Staff easily available
7	13. Staff well trained or not
20	14. Service tally with their advertisement
12	15. Booking system easy and reliable
5	16. Registration & payment is easy & fast
4	17. Staff polite and knowledgeable
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2	19. Service center provide warm feeling to me
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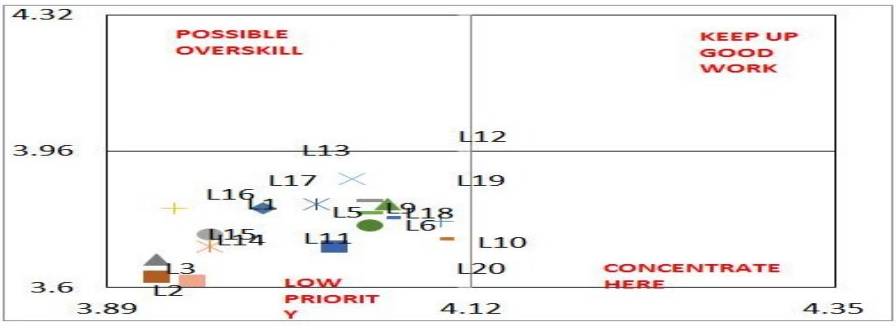

Figure 4. Results of graphical IPA analysis

From IPA results (table 6 & figure 4) it stated that there are three factors that need to be prioritized first in making improvements based on IPA results. The data of correspondent of each category can be clearly seen in table and figure above. Based on the ranking, the top three factors that need to be considered as the first priorities are:

1) Security level of service center.
2) Warm feeling to the customers.
3) Staff pay attention to customers' needs.

Integration of IPA and Kano results

Table 7: Value of IPA ranking

Kano results	IPA results
Summary: The top result for Kano is facilities given by service center should be improved to gain customer satisfaction in the automotive industry.	Summary: The top result for IPA is the security level of service center that is needed to improve in the automotive industry.

CONCLUSION

The customer satisfaction is the individual's perception of the performance of the product or services related to his or her expectations. The customer satisfaction is investigated through Kano method and IPA correlations then it be analysed towards what is customer requirement for the service provided. The customer requirement and improvement needed to be done are known as the table 7 proposed. As both of the approaches' analysis, the main priorities needed to be taken into consideration are, the improvement of "facilities of the service centre" (Kano) and "the security level of the service centre" IPA. These required the further improvement action by the company to fulfill those requirements in satisfaction towards services provided. The previous objective to propose the improvement of the customer satisfaction using the IPA and Kano Method (ServQual approach) is achieved.

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