

# Identification and Categorization of Quantifiable Characteristics of Service Quality for an Automobile Service Centre

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**Abstract**— Service Quality has received increased attention as a means for service firms to attract and retain customers and gain a competitive edge in the marketplace. The measure of service quality performance plays an important role in every quality improvement effort. According to SERVQUAL service quality is a function of five parameters i.e. reliability, assurance, tangible, empathy, and responsiveness (RATER). Further, these parameters are the sub-function of lots of intangible characteristics. For improving service quality level of any organization identification of these characteristics will be the first step. In this work, more than 70 characteristics have been identified for an Automobile service centre. Many of these characteristics are similar in nature; making correction for any one may resolve problems of all the similar characteristics. Hence such characteristics can be grouped in specific categories. Each characteristic has major/minor impact on Servqual parameters. Few amongst them are critical having major impact on more than one parameter. Identifying such parameters is essential for strategizing. In this paper, attempt has been made to categorize quantifiable characteristics on the basis of their impact on RATER for an Automobile service centre.

**Keywords**—Service Quality; SERVQUAL; RATER; Quantifiable Characteristics; Strategizing

## I. INTRODUCTION

The service sector is going through revolutionary change, and the future of economy depends on the growth rate of service sector. After-sales-service is an important department in a car dealer company as two thirds from car shops profits comes from after-sales-service. It includes all the services that take place after the car has been purchased such as scheduled maintenance service and other repairing, accidental repair including painting works, accessories fitment, rust prevention, spare part function, washing & cleaning, over and above all other possible after sales services. In this paper, only scheduled maintenance of vehicles in a popular brand automobile dealership has been considered.

Design of Service Quality has become the most critical task for any company. In the present competitive scenario, for any organization such as Automobile dealership it is essential to provide quality service to retain their customers. The competition in after-sales-service of automobile vehicles has increased significantly. In order to hold the competitive

advantage in the changing market, it is important to formulate precise service strategies to ensure profits in the future as well.

Nowadays, quality has altered from a complementary to a singular corporate strategy (Rapert & Wren, 1998). Taking into consideration the claims of Robinson (1999) that 'quality is in the eye of the beholder', the proper management of its measures, people and processes is demanded. Numerous scholars (Ovretveit, 1993; Yang, 2003; Sinclair and Zairi, 1995; Silvestro et al., 1990) have emphasized the importance of Service Quality (SQ) measurement, as it judges not only the external perceptions but also the internal effectiveness of an organization's operations [1]. Applying measurable functions in their operations and practices, service industries are able to evaluate and improve the service quality.

## II. LITERATURE REVIEW

Service quality has been defined in many ways. One that is commonly used defines it as "the extent to which a service meets customers' needs or expectations" [2]. Researchers have used various dimensions to define service quality. Christian Gronroos, (1984) gave a three-dimensional model of Service Quality, which includes three components namely technical quality, functional quality, and image. [3]. A. Parasuraman, A. Zeithaml and L. Berry (PZB) (1985) developed the most popular instrument for measuring service quality named SERVQUAL [4].

Adele Berndt (2009) has used PZB's instrument to determine the Service quality in Vehicle Servicing in South Africa [5]. Rajnish, Satyendra et.al (2010) measured service quality of an Automobile Service Centre in an Indian city [6]. In the continuation they did further research (2011) to assess impact of service quality strategies executed on the basis of earlier suggestion in the same service organization [7]. Brito and Aguilar (2007) made a research in Brazil about the owners of used cars, and their choice between branded car dealers and independent garages when using maintenance services [8]. In today's business life, the service innovations and developing new services is a process where customer needs are linked to service providers' resources. (Hämäläinen, Nyman, Björk & Lammi 2009), Arantola and Simonen (2009, 3) claimed if

customers talk about their needs they have already identified those and they are able to identify those needs to the possible service provider. Since the customer knows what they want they are able to define the desired solution and make the service providers to compete against each other. Satyendra, Negi (2013) identified the most critical parameters for an Automobile service centre by prioritizing the voice of customer [9]. Ravi S. Behra, et.al, (2002) developed a neural network model of service quality based on Auto-dealership network in the Netherlands, here service quality was represented as a hierarchy of goals and means in the shape of a systematic diagram such as the reverse SERVQUAL model [10].

### III. RESEARCH OBJECTIVE

The objective of this research is to identify and categorize measurable SQ characteristics of an Automobile service centre. There are so many characteristics which are responsible for service quality level of a service centre. Applying measurable functions in their operations and practices, enterprises are able to assess and improve their service quality. Various frameworks have been introduced, in order to measure the SQ such as SERVQUAL and SERVPERF. However, as Robinson (1999) states, it is impossible to construct a 'global measurement approach' of SQ, as each organization is unique and as a result, altered practices are employed [1]. So authors have tried to focus on three fold objectives.

- Identify all relevant service quality characteristics which directly or indirectly affect service quality level of an Automobile dealer's service centre.
- Categorize similar service quality characteristics in various groups.
- Categorize service quality characteristics according to their influence on five dimensions of SERVQUAL model.

### IV. SERVICE QUALITY

Quality is an elusive concept. The definitions range from the vague (e.g. 'the totality of characteristics of an entity that bear on its ability to satisfy stated and implied need') to the Martini advert ("doing the right thing, at the right time, in the right way, for the right person - and having the best possible results"). [11]. Quality is a desirable characteristic that a product or service must have. So providing quality products and services is all about meeting customer requirements [12]. Service quality as perceived by customers can be defined as 'the extent of discrepancy between customers' expectations or desires and their perceptions' (Zeithaml, Parasuraman and Berry, 1990).

### V. SERVQUAL

SERVQUAL is a relatively generic, multi-dimensional Likert scale initially developed by Parasuraman, Zeithaml, and Berry, (1985-88) to address the service quality concerns of businesses that were increasingly forced to compete in a service based economy. This instrument for measuring service quality is based on the differences between the perceptions and expectations of customers regarding the dimensions of service

quality (Athanasopoulos et al., 2001). SERVQUAL measure customer perceptions of the services they received and the importance of the various dimensions of quality service a business may provide [13].

### VI. SERVICE QUALITY DIMENSIONS

Researchers have used various dimensions to define service quality. Combining the research by PZB (1988) [14], it was agreed that service quality of business support services should be evaluated using five service quality determinants as defined below for an Automobile dealership:

- **Reliability** (Promised delivery): Dealerships are known to contact the customer promising that the vehicle will be ready for delivery at a specific time. It is the most important dimension of service quality.
- **Assurance** (Confidence and trust): At dealership, the main source of assurance is with the service adviser, their knowledge and manner of interaction with the customer inspires trust in the organization.
- **Tangibles** (Physical cues): Tangible cues that form part of this dimension include the signage, parking and layout of the dealership itself.
- **Empathy** (Importance): In the case of dealership, this can be seen in the interactions between the organization and the customer, and the nature of this interaction.
- **Empathy** (Importance): In the case of dealership, this can be seen in the interactions between the organization and the customer, and the nature of this interaction.
- **Responsiveness** (Willingness to serve): This refers to the changes that have been observed in service hours from just being weekdays to include weekend and night services, due to the changes in the needs of customers.

### VII. IDENTIFICATION OF SERVICE QUALITY CHARACTERISTICS FOR AN AUTOMOBILE SERVICE CENTRE

In services, it is the consumer who defines the quality. SERVQUAL can assess service quality from the customer's perspective. Customers are asked to evaluate five parameters (RATER) of SQ for the organization by using 22 statements of the Servqual. To make improvement in the service quality, organization needs to re-evaluate or redefine the RATER from its own perspective. It means that organization has to ask how these parameters can be controlled. What are the factors on which these parameters are depend? So it is necessary for the organization to identify such factors. This should be a central concern for service organization as the identification of the characteristics of service quality is necessary in order to be able to indicate, quantify, control and improve service quality.

It is the first step in the improvement of SQ level of organization.

Authors try to listing out of all relevant service quality (SQ) characteristics which directly or indirectly affect the attributes for an Automobile dealership's service centre. Few are having very minute influence on SQ level can be ignored, and or otherwise there analysis becomes too complicated without any relevant information obtained by including them. Table 1 illustrates more than 70 such characteristics of service quality. Any improvement in these SQ characteristics will result in changes in the performance of various parameters. This improvement in the performance parameters can be measured with the increase or decrease in the satisfaction level of the customer.

TABLE I. LIST OF QUALITY CHARACTERISTICS

Sr.No.	Technical Requirements
1	Employees Routine Training
2	Work completes on time
3	Partial work done
4	Final inspection of vehicle
5	Correct Fault diagnosis
6	Poor workmanship
7	Correct Procedure
8	Training of technicians
9	Training of Service advisor
10	Knowledge of SA/Tech
11	Spare parts inventory
12	New part OK/Not OK
13	Spare parts immediately
14	No. of employees
15	Sufficient no of employees
16	No of Skilled technicians
17	No of Skilled Service advisor
18	Tools /Equipments Condition
19	Washing /Cleaning department staff
20	Attitude of Service advisor/Technician
21	Sincerity of SA/Tech
22	Politeness of SA/Tech
23	Behavior of SA/Tech
24	Sensibility of SA/Tech
25	Response of SA/Tech for additional work
26	Communication skill of SA/Technician
27	Effort to Understand the need of Customer
28	Advice at the time of Vehicle delivery
29	Friendly SA/Tech
30	Try to LIVE problem of customer
31	Quick repair for minor work
32	Prior Booking
33	Scheduled post service feedback
34	Basic Infrastructure
35	Suggestion/complaint box

36	Change room for Tech
37	Warranty room
38	Engine room
39	Lunch room
Sr.No.	Technical Requirements
40	Parking area
41	Lift/ stares
42	Pantry
43	Available work space
44	Assurance to customer
45	Billing counter response
46	Bill is clear and correct
47	Keep record/previous history
48	Facility
49	Washing /Cleaning department staff
50	Schemes
51	Customer Waiting room
52	Vehicle pick-up/Delivery
53	Surprise gifts/ Discount
54	Free service camps
55	Incentive for employees
56	Insurance outlet
57	Sales enquiry outlet
58	Accessories outlet
59	Valuation of vehicle for resale
60	Replacement car during repairing
61	FOC for small/minute Problems
62	Mobile service facility
63	House Keeping
64	Environment of SC
65	Awareness charts/Signage boards
66	Safe repairing of vehicle
67	Environment of Customer waiting room
68	Honesty
69	Offer test drive before delivering car
70	Approach of SA/Tech
71	Additional Infrastructure
72	Charges

### VIII. CATEGORIZATION OF SERVICE QUALITY CHARACTERISTICS

From the above mentioned SQ characteristics many of them have some sort of similarity. Modification for any one may resolve problems of all the similar characteristics. Hence such characteristics can be grouped in various categories. The broad classification of the various SQ characteristics is shown below in Table 2. In this table authors summarize more than 70 characteristics into 16 categories. Few of them cover more numbers of factors e.g. serial number 6 represents 14 factors, serial number 12 represents 11 factors, serial number 13

represents 10 factors, and serial number 15 represents 7 factors. Also the selected 16 categorized characteristics are separately listed in Table 3.

TABLE II. CATEGORIZATION OF SQ CHARACTERISTICS

Sr. No.	Factors	Sub-Factor
1	Prior Booking	
2	House Keeping	House Keeping Environment of SC Environment of Customer Waiting Room
3	Scheduled post service feedback	
4	Billing /Job card	All complaints are correctly noted in Job card Billing counter response Bill is clear and correct Keep record/previous history
5	Additional Infrastructure	
6	Overall Staff Attitude	Attitude of SA/Tech Approach of SA/Tech Offer test drive before vehicle delivery Sincerity of SA/Tech Politeness of SA/Tech Behavior of SA/Tech Sensibility of SA/Tech Response of SA/Tech for additional work Communication skill of SA/Technician Effort to Understand the need of Customer Advice at the time of Vehicle delivery Friendly SA/Tech try to LIVE problem of customer Honesty
7	Schemes	Schemes Surprise gifts/ Discount Free service camps Incentive for employees FOC for small/minute Problems
8	Assurance to customer	
9	Washing /Cleaning proper	
10	Awareness charts/Signage boards	
11	No. of employees	No. of employees Sufficient no of employees No of Skilled technicians No of Skilled Service advisor
12	Basic Infra Structure	Basic Infrastructure Suggestion/complaint box Change room for Tech Warranty room Engine room Lunch room Parking area

Sr. No.	Factors	Sub-Factor
		Lift/ stares Pantry Customer Waiting room Available work space
13	Employees Routine Training	Employees Routine Training Work completes on time partial work done Final inspection of vehicle correct Fault diagnosis Poor workmanship Correct Procedure Training of technicians Training of Service advisor Knowledge of SA/Tech
14	Spare parts	Spare parts inventory Spare parts immediately New part OK/Not OK
15	Facility	Vehicle pick-up/Delivery Mobile service facility Replacement car during repairing Insurance outlet Sales enquiry outlet Accessories outlet Valuation of vehicle for resale
16	Tools /Equipments Condition	

#### IX. CATEGORIZATION OF SQ CHARACTERISTICS AS PER THEIR INFLUENCE ON RATER

Each of the categorized characteristic has its impact on Servqual parameters. Some of them have major impact while others have minor impact. Further categorizations of characteristics can be done according to their influence on dimensions of SERVQUAL model. The Reliability of an automobile service centre is concerned with promised delivery of vehicle. The main characteristics those affect promised delivery are overall staff attitude, spare parts department, condition of tools & equipments, number of employees, washing & cleaning department and basic infra structure. In addition prior booking of vehicles and activities during job card making/billing may also affect promised delivery to some extent.

Similarly characteristics those affect other four Servqual dimensions as per their definition for automobile service centre are determined. A number of the characteristics have their impact on more than one parameter, e.g. employees routine training, overall attitude of staff, number of

employees, washing & cleaning department, condition of tools/equipments etc. Table 4 shows the illustration of categorization of characteristics according to their influence on Servqual parameter.

TABLE III. SELECTED SERVICE QUALITY CHARACTERISTICS

SR. NO.	TR. NO.	SR. NO.	Quality characteristics
1	Prior booking	9	Washing/cleaning proper
2	House keeping	10	Awareness charts
3	Scheduled Post service feedback	11	No. of employees
4	Billing/job card	12	Basic infrastructure
5	Additional Infrastructure	13	Employees routine training
6	Overall staff attitude	14	Spare parts
7	Schemes	15	Facility
8	Assurance to customer	16	Equipments/tools condition

TABLE IV. CATEGORIZATION OF SQ CHARACTERISTICS AS PER THE INFLUENCE ON RATER

Characteristics' affecting				
Reliability (Promised Delivery)	Empathy (Importance)	Responsiveness (Willingness to serve)	Tangible (Physical Cues)	Assurance (Confidence & Trust)
Overall staff Attitude	Prior Booking	Overall staff Attitude	Awareness charts/ Signage boards	Overall staff Attitude
Spare parts	Scheduled post service feedback	Billing counter Response	House Keeping	Assurance to customer
Tools /Equipments Condition	Schemes	Tools /Equipments Condition	Basic Infrastructure	Employees Routine Training
No. of employees	Facility	No. of employees	Tools/ Equipments Condition	No. of employees
Employees Routine Training	Assurance to customer	Employees Routine Training		Prior Booking
Washing /Cleaning department	Washing /Cleaning department	Washing /Cleaning department		House Keeping
Basic Infrastructure	Employees Routine Training	Mobile service Facility		Basic Infrastructure
Prior booking	Safe repairing of vehicle	Spare parts immediately		Spare parts inventory
Job card /Billing		Quick repair for Minor repairs		
Scheduled post service feedback				

## X. CONCLUSION

The main purpose of this research was to identify and categorize the quantifiable SQ characteristics for an Automobile service centre. Quality characteristics have been categorized into 16 different groups. Further these SQ characteristics have been categorized according to their influence on five dimensions of SERVQUAL model. By knowing the impact of individual characteristics, organization should be able to select the appropriate characteristics through which improvement can be made in grey areas. A suitable qualitative/quantitative model can be chosen to process the

relevant data pertinent to critical characteristics. Outcome of such analysis can be used to formulate the strategies to improve the service quality level by bridging the gap between customers' expectations and perception.



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