

## Service Quality in the Motor Vehicle Maintenance and Repair Industry: A Documentary Review

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### **Abstract**

*In spite of the important roles motor vehicles play in various economies research in terms of service quality of maintenance and repair of these contraptions appear to be limited relative to its importance. The aim of this paper is to collectively unitize studies in the area. The purpose is to make available a one-stop document that will guide future researchers in the motor vehicle maintenance and repair industry. A convenient sampling approach was adopted to select and review 16 journal papers from the World Wide Web. The study appears to show that SERVQUAL continues to be the most popular method of assessing the quality of service in the motor vehicle maintenance and repair industry. The study concludes that the 5-dimension SERVQUAL model may not be universal per se but may best be described as so far the closest to an ideal model which can be used as a foundation for developing subsequent models within the motor vehicle maintenance and repair service industry.*

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**Keywords:** *Servqual, Motor Vehicle, Maintenance and Repair, Documentary Review*

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### **1. Introduction**

In today's competitive world, service to the customer has become an important business process which influences growth and development, profitability and greater access, and improved customer satisfaction and loyalty (McMurrian & Matulich, 2006; Viljoen, Bennett, Berndt, & van Zyl, 2005). Customer service also influences competitive advantage, profitable opportunities, product quality through improved sales and income (Goofin & Price, 1996). Thus in both developed and developing countries, the recognition of the relevance of the service sector has increased with great alacrity. Service providers are therefore basically concerned on providing improved service quality with the aim of increasing the levels of customer satisfaction and loyalty (Reicheld, 1996; Zeithaml, Berry & Parrasuraman, 1996, Reichheld, 1993).

According to Tour and Kumar (2003) the duties and functions of the services sector are variegated. These include provision of logistics and spare parts, documentation, startup services, improved products, insurance, warranty, call centre services, training and maintenance and repair. Calif (1987) defines maintenance as changing, cleaning, installing and restarting up problematic components. Khaksar et al (2011) explain that the motor vehicle services industry presently encompasses leasing, training, innovational services (such as data managing functions); communication; training; discovery services which involves product fault detection and rectification without customer cost (Kruse et al 2010) as well as maintenance and repair. In the motor vehicle industry the provision of maintenance and repair is an indispensable component of customer service. This is to ensure that the quality of the

product is continuously maintained.

Motor vehicles need to be regularly maintained and repaired when necessary in order to ensure vehicular health, longevity as well as human and vehicle safety. Globally millions of vehicles are produced annually. These vehicles need maintenance and repair as the need may be. Statistics show that, in the US, over 75% of all jobs, of which the motor vehicle maintenances and repair is an indispensable part, is in the services sector. The service sector also creates over 85% of newly-created jobs in the U.S. Over 60% of the Gross National Product (GNP) of the U.S is further generated by the services sector. In developing countries such as Brazil 54.5% of GNP is generated by the services sector (Cauchick, Miguel Salomi, 2004). In Malaysia, about 58% of economic activities in terms of value are from the services sector (Elistina & Naemah, 2011). The motor vehicle industry in South Africa deals with over 30 brands on the market and over 1000 mode variants (Anon, 2006). Foster (2006) however reordered 42 brands in South Africa with over 1200 model variants, creating 10,000 jobs. The motor vehicle industry in South Africa therefore contributes about 7.6% to the GNP of the country.

The contribution of the auto industry to the GDP in India is estimated to be about 7.1% percent, creating over 2 million jobs directly, 10 million indirectly, and 19 percent to indirect taxes (KPMG and CII, 2008). In South Africa, vehicular sales increased by 13.3% (Annum, 2007). In Ghana, the average rate of vehicle importation was about 70,000 per annum, between 2003 and 2007. Since motor vehicles are the cardinal means of transport for movement of goods and persons from one point to another, the maintenance and repair maintenance sector of the auto industry needs to be given prominent attention. Its contribution to GDP of national economies, employment, and human comfort makes it one of the most important industries in all economies. The quality of service delivered in the industry is therefore paramount.

In spite of the great importance attached to service quality, customers in the industry do not have the required expertise and experience and therefore have disadvantaged bargaining power (Elistina & Naemah, 2011). Many researchers are of the opinion that customers do not have full capacity to dialogue required needs with service providers due to ignorance in the antecedents of the industry, making them culpable to cheating and loss of value for money. Studies from the United Kingdom, Australia, and Malaysia attest that the car maintenance and repair industry experience frequent complaints annually as recorded by authorities in charge such as Division of motor vehicle (Australia), Federation of Malaysian consumers Associations (Malaysia) and European Consumer Law group (United Kingdom) (Elistina & Naemah, 2011). Nevertheless, research in the area appears to be limited relative to its importance. One way to facilitate studies in the area is to make literature pertaining to the area available and easily accessible to future researchers. Managers could then take advantage of these future research findings to improve service quality in the industry through customer satisfaction and loyalty techniques.

Consequently, the importance of the motor vehicle industry to the economies of both developed and developing countries cannot be overemphasized. In terms of employment, taxation, GDP and the economy in general, the industry plays a crucial role. Hence, the sector cannot stand on its own when the component of maintenance and repair services is relegated to the background. Maintenance and repair services considered as after-sales services is therefore crucial if the motor vehicle industry can be sustained. The quality of services in the maintenance and repair service industry, for this reason, has an immense role to play. An

improved service quality has been found to increase customer satisfaction and customer loyalty among others (Jahanshahi, Gashti, Mirdamadi, Nawaser and Khaksar, 2011; Van Es, 2012). Both businesses and researchers have therefore become more interested in the area of service quality and with much attention. The present study observed that research made by various researchers is decimated making it difficult to study in the area and which specific areas need what particular research. Correctively unitizing studies on service quality in the motor vehicle maintenance and repair industry will therefore go a long way to facilitate future studies in the area and help improve the quality of services delivered in the industry for the betterment of customers.

The aim of the study was to review documents on existing literature with reference to service quality. However the objectives were: first, to review literature on service quality in the motor vehicle maintenance and repair service industry; second, to identify areas of future research; and finally, to present summarized forms of various papers reviewed. Researchers interested in the study area of service quality in general and the motor vehicle maintenance and repair industry in particular will find the present paper useful.

## **2. Study Approach**

As a respected and recognized scientific method of enquiry, the documentary research method was utilized in this study (Mogalakwe, 2006). The documentary method may be defined as the analysis of documents that contain information or data or both about a phenomenon under assessment, investigation, evaluation, explanation, review and or otherwise (Bailey 1994). Documents should therefore be related to field of study and of interest to the researcher. Payne and Payne (2004) explain the documentary technique as written documents used to identify, investigate, categorize, and or interpret a concept, phenomenon or occurrence. As a documentary study the paper employed convenience sampling to select 16 related journal papers from the World Wide Web. In this regard, it is a requirement that reliable secondary documents were sampled from peer review double-blind journal sources. The authenticity, credibility, representation and meaning of the papers were therefore assured. Thus the papers reviewed were from genuine sources, have integrity; were free from errors, and distortions; evidential in general terms; related to field of interest and have clarity and comprehension, in agreement with the requirements of Mogalakwe (2006), Payne and Payne (2004) and Bailey (1994).

## **3. Literature Review and Findings**

This section contains literature review on definitions of service quality by various researchers. It submits the dimensions of service quality as propounded by Parasuraman et al. As much as possible, study titles, author, year of study, method, empirical findings, conclusion and recommendations are submitted. Papers were categorized into three: influence of independent parameters on service quality; influence of service quality on dependent parameters; and determination of service quality dimensions. The reviewed papers were published from 2007-2015, a period of eight years, originating from 12 countries namely: Ghana, Brazil, Saudi Arabia, US, India, Malaysia, South Africa, Pakistan, Slovenia, Bahrain, Nigeria and Sweden. Seventeen journal papers were reviewed.

### **3.1 Definition and Dimensions of Service Quality**

Both the quality of service and customer satisfaction is gaining importance and popularity due to the impart they have on the average performance of businesses and organizations (Ažman & Gomišček, 2015). Hence various definitions of quality and services have been provided with basis from many philosophies. According to Deming (1970) quality may be

defined as evaluative assessment of the degree of steadiness and dependability in terms of quality standard viewed by the customer. In the opinion of Deming (1970) the customer is the only determinant of the quality of service, though Garvin (1988) and Juran (1988) observed that in defining quality, early researchers concentrated most on tangible goods and products rather than intangible services. Crosby (1979) however defined quality of goods as products that conform to the requirements of its customers. On the other hand Garvin (1988) defined quality in relation to internal and external failures by measuring quality through the number of malfunctions. Garvin (1988) explained internal failures as malfunctions found on a product before leaving the factory floor. External failures are those observed after the product has been delivered and installed. On the other hand, Juran (1988) defined quality from the business point of view; stating quality as product characteristic which satisfies the needs of the customer and therefore finally bringing satisfaction, though attempt to achieve this brings forth increased investment and increased product cost.

In trying to define quality in the context of intangible products, as services, Parasuraman et al (1985) conceptualized the “service quality” expression. Thus service quality may be defined as a form of attitude which relates to satisfaction though may not be equivalent. It arises from the comparison between customer expectations and performance (Parasuraman et al, 1988). The definition of Lewis and Mitchell (1990) that service quality is the degree to which customer needs are met with expectation is in consonance with the definition of Parasuraman et al (1988). Thus in determining the quality of service customers compare what is perceived, in terms of performance, with what is expected (Kiew & Chee, 2007). Service quality can therefore be defined as the difference between expected customer service and perceived customer service. A positive difference between expectations and performance yields customer satisfaction. Conversely, a negative difference produces customer dissatisfaction (Parasuraman et al (1988).

It is now necessary to acknowledge the difference between goods and services. Though many definitions also abound in literature the one given by Rouse (2005) and Grönroos (2001) shall be deliberated. Rouse (2005) describes goods as tangible items that can be tasted touched, seen by the customer while service, in the business parlance are more related to valuable action, deed performance or an effort intended to satisfy a need and satisfy customer demand. According to Grönroos (2001), many researchers and academics have defined services from their own perspective. Grönroos (2001) however acknowledges that a singular feature that appears in those definitions is that services are not things but rather processes, implying that a service producer does not produce physical or tangible items only but also go through interactive processes with the customer. Grönroos (2001) therefore defines service as “an activity or series of activities of a more or less intangible nature than normal, but not necessarily, take place in the interaction between the customer and the service employee and or physical resources or goods and or systems of the service provides, which provided as solutions to customer problem.” It is worth mentioning that this appears to be the most comprehensive definition of services in the literature of service quality in particular and services in general.

Producing quality services has many benefits. For example Parasuraman, et al (1985) observed that the principal strategy that could generate organizational success and survival is the provision of customer quality services. According to Naik, Gantasala and Prabhakar (2010) the quality of service delivered is a determinant of customer satisfaction and long term loyalty. Power (2016) supports this view with empirical evidence and argues that service quality actually holds the key to customer loyalty. Service quality has also been found to

influence organizational competitiveness, effectiveness and flexibility (Gržnic, 2007). A study by Anderson, Fornell and Lehmann (1994) showed that good quality service has positive influence on customer satisfaction and profitability of businesses. The effect of good quality service on market share was however mixed due to trade-offs between customer satisfaction and market share goals.

Pioneering the work on the quality of service delivered by the provider, Parasuraman et al (1985) identified 97 attributes that influence service quality by impacting on customer expectations and perceptions. They were later collapsed into 10, and finally to 5 (Parasuraman et al, 1988) due to overlays and correlations between some (Jannade & Al-Saggaf, 2000). The best five dimensions as propounded by Parasuraman et al (1988) used to measure service quality are, therefore, tangibility, reliability, responsiveness, assurance and empathy. A 22-item-scale was developed by Parasuraman et al (1988) to measure service quality performance referred as SERVQUAL composed of the five dimensions (refer table 1).

The SERVQUAL model is widely used to measure services quality segments and portfolios (Ladhari, 2009). For example, SERVQUAL has been used in industries such as education, telecommunication, retail, airline, hotel, catering, medical care, banking and automotive industries. The SERVQUAL model relies on the gap between what the customer expects and what he perceives to have been offered. It is therefore the duty of the service provider to fill the gap (short fall) that may arise as a result of expectations falling below the actual performance by the provider (Lewis et al, 1994). Though Brown and Bond (1995) describes the gap model as the most heuristically valuable, best-received discovery, a practical problem solver and the most widespread applied concept within service quality literature, it is not replete of some limitations (Shahin, 2007). Some of the criticisms include its affirmation pattern; non-consonance with proven statistics, psychological and economic theoretical limitations; lack of evidence on perception-expectation gap evaluation; service delivery process nature; non-universality of the SERVQUAL dimensions; and high degree of inter-correlation between the service quality dimensions of tangibility, reliability, responsiveness, assurance and empathy (Carman 1990; Teas 1993). Cronin and Taylor (1992) explained that “expectation” has multiple meanings and that SERVQUAL does not measure absolute expectations of service quality; that there is no “moment of truth” in administration of the questionnaire; and that it is accompanied with boredom and confusion when answering the two sets of questions, perception and expectations simultaneously.

In responding to the issue of measuring expectations and perception of the delivered service, Cronin and Taylor (1992, 1994) developed the Service Performance (SERVPERF) model which proposed measuring service quality using performance-only measurement scale; a single item scale for that matter (Jain & Gupta, 2004). Cronin and Taylor (1992) were of the view that though the SERVQUAL dimensions were suitable in measuring service quality, the two measurements (expectations and perceptions of delivered service) were unacceptable due to their poor evaluation capacities. Though other GAP models have been proposed, it appears SERVQUAL is the most popular in literature (Shahin, 2007; Shahin & Samea, 2010). Whether the gap model or the perceptions-only is used to measure service quality depends on the primary purpose of study (Zeithaml et al, 1996). In spite of the fact that the debate on which model should be used continues, the authors argue that earlier authors in the area agree to some extent on this assertion (Brown, Churchill & Peter, 1994; Cronin & Taylor, 1992; Parasuraman, Berry & Zeithaml, 1993; Parasurman et al; 1994; Teas, 1993). The authors found that if the primary purpose of study is to explain the variance in dependent constructs,

the perception-only conceptualization is more appropriate. However, if the primary purpose is to obtain accurate diagnoses in service reduction (Parasuraman et al, 1994a ;) the gap analysis should be preferred.

### **3.2 Influence of Independent Parameters on Service Quality**

Elistina and Naemah (2011) report that many customers in the car sector frequently complain about service delivery. One salient reason is that motor vehicles are essential property upon which their mobility depends. Researching on the topic “Consumers’ perceptions on the service quality in the motor vehicle repair and service industry: An exploratory study,” in Klang Valley, Malaysia”, the objective of the study was to determine consumers’ perceptions towards services delivered by garages. The purpose was to ensure better consumer protection. Four hundred subjects partook in the study. The simple random sampling technique was used to collect data using self-administered SERVQUAL questionnaire. The questionnaire was modified adding two more dimensions, cost (3 attributes) and communication (4 attributes) (Ministerial Council on Consumer Affairs, 1999) to the original Parasuraman et al (1988) SERVQUAL 22-item scale. The questionnaire comprises tangibility, reliability, responsiveness, assurance and empathy dimensions. Thus a total of 29 attributes were structured and categorized into 7 dimensions. A five-point Likert scale was adopted, ranging from 1= “strongly disagree” to 5 = “strongly agree.”

Two samples were categorized into small and big garages. The small garages were those that service all types and brand of vehicles while the big garages include franchisors of manufacturers and importers; and vehicle manufacturers who provide after- sales services. Twenty service centers with 10 customers from each center were selected from small garage customers. Fifty customers each from 4 manufacturers were also sampled from the big garage category. The manufacturers were Perodua, Naza, Proton and Honda, all in Malaysia. Demographic profile of respondents, such as age, gender, income, level of education, marital status, occupations, frequency of visit and technical knowledge were obtained. In assessing the reliability of the instrument, an overall Cronbach alpha of 0.908 was also obtained.

The authors appreciated that, though one of the most commonly and regularly patronized service is the motor vehicle maintenance and repair service, it is associated with many complaints in terms of the quality of service rendered. The researchers eventually found that service quality is influenced by tangibles, reliability, responsiveness, assurance, empathy, cost and communication. The results of the study showed fair perception of customers in assessing the quality of service delivered. Mean scores were between 3.01 and 3.97. However, the small garages had lower total score (104.76) than the big garages (107.298). The authors therefore concluded that consumers of lower garages had poorer perceptions toward service delivered than those of big garages. Using t-test analysis, the study revealed that there were eleven items which exhibited significant differences between big and small garage scores.

Among the conclusion was an enactment of a specific legislation to deal with activities in the industry. The authors observed that consumers were exploited by service providers since they do not have the requisite expertise and experience about the quality of service delivered. The study finally recommended stakeholders such as consumer organizations, consumers and traders to cooperate in ensuring that higher quality of service is delivered in order to protect consumers since motor vehicle maintenance and repair service has become a common type of service in Malaysia.

Researching on the effects of tangibility, reliability, responsiveness, assurance and empathy on service quality, Ambekar (2013) had a study on the topic “Service Quality Gap Analysis of Automobile Service Centers” in India. The specific objective was to determine the influence of the 5- SERVQUAL dimensions on service. However, 17-item questionnaire was used instead of the 22-item SERVQUAL scale. Thus 17 factors were identified as influencers instead of 22. Both population and sample were taken from Pune city. Respondents were commercial and personal vehicle owners made of 25 subjects each. The convenience sampling method was adopted. The gap model as propounded by Parasuraman et al (1988) was employed. Two hypotheses were propose: One, there is significant difference of mean ratings between expected ( $\mu_e$ ) and perceived ( $\mu_p$ ) service quality parameters for personal vehicle users; and two, there is significant difference of mean ratings between expected ( $\mu_e$ ) and perceived ( $\mu_p$ ) service quality parameters for commercial vehicle users. Means and combined means of expected and perceived scores for both commercial and personal vehicle owners across the five dimensions were computed.

The study revealed that, for personal users, reliability was the highest factor with combined mean (6.9) and tangibility having the lowest combined mean (6.03). With reference to perceived scores, Assurance was the highest (6.09) and empathy, the lowest (5.59). A paired sample t-test was used to compare perceived and expected scores. The study revealed a considerable difference between expected and perceived service quality for personal vehicle owners. The author concluded that personal vehicle users have higher expectations from service providers since vehicles are put to personal use. The study also revealed that in spite of availability of modern technology, responsiveness, reliability and empathy are found wanting. The difference between expected and perceived scores for all the five dimensions were found to be significant at  $\alpha = 0.05$ ; d.f. =24; and  $t = 2.064$ .

The results for commercial vehicle users were similar to that of the personal users, except tangibility which was statistically insignificant. The author explained this to result from customers having low expectations of tangibility. They also explained that customer satisfaction of motor vehicle maintenance and repair service garages depend on factors such as services as promised, time of delivery and delay in releasing vehicles. The study concluded that there is the need to improve technology and recommended that the responsiveness factor also need to be improved.

In today’s severe competition and tight market environment it is important that business, including those in the motor vehicle repair and maintenance industry ensure that customer demands and expectations are met through continuous service quality improvement in order to compete favorably with businesses in similar environment (Al-Shammari & Kanina, 2014). This observation was made by Al-Shammari & Kanina (2014) in a study entitled “Perceived Customer Service Quality in a Saudi Automotive Company” The objectives of the study were three-fold, namely; to test the reliability of the service quality instrument; to understand the levels of service quality dimension in a Saudi Automotive Company (SAC); and to assess the relative importance of each service quality dimension for customers. The Parasuraman et al. (1988) SERVQUAL instrument was adopted. Thus five final dimensions of reliability, tangibles, responsiveness, empathy and assurance were assessed in relation to service quality. With a population of 16,849 customers, 140 were targeted using the cluster sampling technique. Three subgroups from three different geographical areas consisting heterogeneous customers from different demographic strata, including age, educational level and vehicle ownership were sampled. The response rate was 83.6% made of 117 respondents. A pilot study of 20 customers was organized yielding Cronbach alpha for all dimensions

greater than 0.7. Cronbach alphas ranged between 0.899 and 0.931 with overall being 0.92. The questionnaire was found to be reliable with favorable internal consistency and inter-correlation. Demographic profile of respondents dwelt on age, nationality, educational level, vehicle ownership and number of times of visit at SAC. Results of the study showed good customer satisfaction with maintenance and repairs services.

The authors found that the mean value for Tangibility was 4.48, (SD = 0.7), implying customers agreed the company's facilities were usually appealing and had modern technology; and that equipment, tool and staff were neatly appearing. The mean Reliability value was 4.37 (SD = 0.81). This means there was a general agreement that customers were satisfied with the statements made; that when SAC promised to do something by a certain time it does so; when customers have a problem SAC showed a sincere interest in solving it; SAC performed service right the first time; and SAC provided its services at the time it promises to do so. The mean Responsiveness dimension was computed to be 4.32 (SD = 0.82). This implies service quality with regards to this dimension was satisfactory, showing that SAC employees tell customers exactly when services will be performed; SAC employees give prompt services to its customers, company SAC employees are never too busy to respond to customer's request. With respect to Assurance, the mean score was 4.41 (SD = 0.79). This shows that service quality with regard to this dimension was favorable, meaning company employees instill confidence in customers; customers feel safe in transacting with the organization; SAC employees are consistently courteous to customers; and staff has the knowledge to answer customers' questions. The mean of the final dimension, empathy, was calculated to be 4.28 which mean that customers agreed that the company gives attention and better service quality in terms of employees giving individual attention; company operates at convenient hours; employees give personal attention to its customers and SAC has customers best interest at heart.

The study further showed that Reliability and Assurance were the most important dimensions (24% each) followed by tangibility and responsiveness (19% each). The least important dimension was empathy (14%). The study concluded that though factors influencing service quality as propounded by Parasuraman et al (1988) were favorable for the company, reliability, responsiveness and empathy need to be relatively improved.

Studying on the topic "Evaluation of Service Quality in Two Wheeler Automobile Industries using the SERVQUAL Model" (Mohd & Jadoun (2015), the objectives were three-fold: to find the gap between customer expectation and perception of different two-wheeler automobile service industries; to compare service quality of different two-wheeler automobile service industries; and to do hypothesis-testing. Hero, Honda and Bajaj vehicle users from three major cities, Lucknow, Moradabad and Noida in Uttar Pradesh province in India were the participants. The SERVQUAL scale developed by Parasuraman et al (1988) was employed with two additional attributes; parking area and appropriate location were added. Thus a 24 item instrument was used with a 5- point Likert scale which ranged from 1 = "strongly disagree; to 5 = "strongly agree. The Cronbach alpha reliability coefficients ranged from 0.877 to 0.880 after a pilot test was organized. Fifteen subjects participated in the pilot study. The overall Cronbach alpha value for the study was however found to be 0.885. Testing three hypotheses, the authors found that; one, there was significant difference of mean ratings between expected and perceived service quality dimensions for Hero two-wheeler motor vehicle users; two, there was significant difference of mean ratings between expected and perceived service quality parameters for Bajaj two-wheeler vehicle users. And there was significant difference of mean ratings between expected and perceived service quality parameters for Honda two-wheeler vehicle users.



The conclusion of the authors dwelt on the findings; that there was a significant gap between expected and perceived service in the industry with respect to Hero, Bajaj and Honda two-wheeled vehicles in the Uttar Pradesh cities of India. Customer satisfaction was below expectation. Stressing on the findings, the authors recommended that reliability dimensions of service without delays and error free service, need to be improved. Tangibility dimension of visually appealing materials also need to be improved. The improvement of service staff having time to help customers under responsiveness dimension was further highlighted. The authors also recommended that employees should instill confidence in customers. This is an Assurance dimension. Other recommendations dwelt with provision of personal attention (Empathy) and adequate parking court (Accessibility). The study on the other hand commended staff for providing security and safety (Assurance); and appropriately locating organizations (Accessibility) to the benefit of customers.

The work of Baidoo, Odum-Awuakye and Oduro-Okyireh (2015) was concerned with manager/management perception of service quality with respect to demographic characteristics. Stating the objectives, three hypotheses were tested, viz; one, service quality does not depend on the level of education of managers; two, service quality does not depend on the degree of manager's experience; and three, service quality does not depend on the number of modern equipment in motor vehicle repair and maintenance garages. The study area was Cape Coast Metropolis in the Central Region of Ghana. Forty motor vehicle repair and maintenance service managers from forty garages took part in the study. Out of a total of 60 garages identified, the Yamene (1967) formula was used to select the sample. Sampling was done using accidental and purposive techniques. Self-designed questionnaire of the researchers was employed. The questionnaire was made up of three sections; managers demographic and garage characteristics as well as service quality attributes.

Applying Chi-square test for independence at 0.05 significance level, the authors found that, service quality of garages does not depend on manager's experience. The study, however, revealed that service quality is dependent on manager's level of highest educational attainment. The study further showed that service quality of garages does not depend on modern equipment in a garage. The authors therefore recommended that service garage owners need to avail themselves for further training when they get the opportunity. Other recommendations include government support in the provision of equipment and tool; after-sales dealership service; and garages merging to form larger organizations.

Ažman and Gomišček (2015) published a paper entitled "Functional Form of Connections between Perceived Service Quality, Customer Satisfaction and Customer Loyalty in Automotive Servicing Industry" with the objective of examining the functional relationships between service quality, customer satisfaction and customer loyalty. The authors established that there is consensus as to the specific type of functional form between dependent and independent variables and hence the examination. Thirty four thousand, four-hundred-and-twenty-one(34,421) Slovenian respondents took part in the study. Automobile servicing organizations in the industry were involved. Computer-aided telephone interviews of customers who maintained or repaired their vehicles were made. SPSS was used to process the data. Linear and several non-linear regression models were employed as the statistical tools. Results showed that the non-linear functional models slightly did well than the linear model. Specifically the concave functional form explained between 41 and 47% more than the linear model. The recommendations made by the authors include companies improving the quality of service rendered to improve customer satisfaction so that higher returns could be achieved.

### 3.3 Influence of Service Quality on Dependent Parameters

Studying “The Effects of Customer Service and Product Quality on Customer Satisfaction and Loyalty”, (Jahanshahi, Gashti, Mirdamadi, Nawaser and Khaksar, (2011) modeled three hypotheses namely: customer service quality has effects on customer satisfaction in the automotive industry; product quality has effects on customer satisfaction in the automotive industry, and customer satisfaction has effects on customer loyalty in the automotive industry. A 53-question instrument which was made up of 24 for customer service quality and product quality, 13 for evaluation of customer loyalty, and 11 designed to assess customer satisfaction. An 8-point Likert scale with 1=“extremely dissatisfied”; 2=“very dissatisfied”; 3=“fairly dissatisfied”; 4=“neither satisfied nor dissatisfied” 5=“fairly satisfied”; 6=“very satisfied” and 7=“extremely satisfied”. SPSS version 16 software and regression and ANOVA tests were performed to process and analyze data respectively. The population was 586 consisting of all Tata India car owners, product of Tata Motors, purchased within April 2008 and January 2010 in the city of Pune, India. The population sampled was 250 using random sampling technique while 234 was used for the analysis.

Both reliability and validity tests were favorable with Cronbach Alpha coefficients for service quality, product quality, customer satisfaction, customer loyalty, and overall Cronbach Alpha being 0.841, 0.881, 0.874 and 0.910 respectively. Demographic characteristics include age, highest educational attainment and gender. Regression analysis gave the following results: One,  $r$  squared values were 0.744, 0.772 and 0.792 for first, second and third hypotheses respectively, indicating high correlation between the dependent and independent variables; Two, customer service quality has effects on customer satisfaction in the automotive industry; Three, product quality influences customer satisfaction in the automotive industry; and four customer satisfaction have significant effect on customer loyalty. Significance level ranged between 0.0005 and 0.025.

Analyzing the variances of the hypotheses, the ANOVA test indicated that customer service and product quality influences customer satisfaction. There was also a positive correlation between customer service and product quality on customer satisfaction and customer loyalty in the automotive industry in India and particularly, the Tata Motor Company. The authors of the study concluded that there is automatic expectation of the relationship between perceived quality, customer satisfaction and customer loyalty in situations where companies do not depend on external agencies for after-sales services including maintenance and repair. They were also of the view that though customer satisfaction increases customer loyalty, there were instances when satisfied customers may not be loyal to particular vehicle brands. Jahanshahi et al (2016).The authors therefore further concluded that though it is a challenging task, businesses in the industry need to pay simultaneous attention to customer satisfaction and loyalty.

A study of title, “The Relationship between Service Quality and Customer Loyalty, and its Influence on Business Model Design: A Study in the Dutch Automotive Industry” though does not deal primarily with motor vehicle maintenance and repair service industry, it has been included in this review since it indirectly relates to the industry as a car materials and accessories (parts) supplier (Van Es, 2012). The results of the Study indicated that customers do expect a lot from the supplier, Koskamp B.V. (van Es, 2012). In an attempt to state the objective of the study a hypothetical question was rather posed by the author as “To what extent does service quality influence a loyal customer relationship and how does Koskamp change their business model in order to increase customer loyalty?” The SERVQUAL model of Parasuraman et al (1988) was used for the study. Reliability test gave overall Cronbach

alpha value of instrument as 0.95; customer satisfaction, 0.83 and customer loyalty, 0.914. The instrument consists of 15 items for service quality, 5 items for customer satisfaction and 4 items for customer loyalty.

SPSS 16 version for windows XP was utilized. Demographic characteristics were also part of the questionnaire. According to Van Es (2012), the organization “Kamer Van Koophandel” recorded 20,181 customers in the Netherlands. The study population was therefore 20, 1181. Since only 439 email addresses were available the study target 439 garages. Participation was by invitation through electronic mail system. Each garage was requested to choose one of their suppliers to respond to the questionnaire. The criteria for the selection were emphasized. First, the supplier must be supplying parts to the garage; second, the garage must be patronizing the services of the wholesaler or supplier; and thirdly, the supplier must be an actor in Dutch business-to-business parts dealership market only. At a response rate of 26% data was collected between 1<sup>st</sup> March 2012 and 15<sup>th</sup> March 2012. Questionnaire was online through hyperlink.

With 144 garages as respondents, an online questionnaire was administered. The study revealed that there is a positive correlation between service equality and customer satisfaction within the Dutch automotive parts industry ( $r=0.912$ ). The study also showed that there is a positive correlation between service quality and customer loyalty within the Dutch automotive parts industry. The study further showed that there is no direct positive relationship between service quality and customer loyalty due to the influence of customer satisfaction. The author concluded that, in addressing the challenges of service quality of Koskamp B.V., management should concentrate on improving reliability, responsiveness and empathy. Besides, the study concluded that the difference between the qualities of service delivery among the suppliers was significant. The study recommended that Koskamp BV could make use of IREL, a computer software program and a customer information system which provides improved work approach towards customer orientation. The company should also attract new sales representatives and pay attention towards customers through regular visits.

A study by Al-Shammari and Kanina (2014) entitled “Service quality and its relationship with customer satisfaction and loyalty in a Saudi Arabian Automobile Company” used the GAP analysis of Parasuraman et al (1988) to establish the relationship between Service quality and customer satisfaction as well as customer loyalty. The objectives of study was to measure the gap between expected and actual perceived service quality; to measure the levels of customer satisfaction and loyalty; and to examine the relationship between customer satisfaction and customer loyalty. The research methodology in the paper is similar to Al-Shammari and Kanina (2014), already reviewed in this paper and therefore shall not be reconsidered.

Results of the study showed that customers have high expectations with regards to services delivered. At-test showed significantly negative values ( $\rho=0.0005$ ) for all five dimensions of SERVQUAL. A mean value of 4.37 for customer satisfaction and 4.38 for customer loyalty was obtained. In spite of this development the study disclosed that customers are satisfied and loyal to the company. The study also showed that there is a strong positive relationship between service quality and customer satisfaction. The spearman’s correlation coefficients of tangibles, reliability, responsiveness, assurance and empathy as  $\rho=0.542$ ;  $\rho=0.562$ ;  $\rho=0.483$ ;  $\rho=0.512$  and  $\rho=0.542$ ;  $\alpha=0.01$  respectively were obtained. The relationship between service quality and customer loyalty was also strong and positive. The spearman’s correlation

coefficients were  $\rho=0.498$ ;  $\rho=0.491$ ;  $\rho=0.507$ ;  $\rho=0.513$ ; and  $\rho=0.588$ ; ( $\alpha=0.01$ ) respectively. The authors concluded that customers in the motor vehicle maintenance service industry today are particular with garages sending reminders when service is due, prefer to find it easier to book appointments for maintenance and repair activities and to be treated on individualized basis. The authors argued that customer retention is based on meeting customer expectations and beyond. They further argued that achieving this feat depends on how close providers would be with customers; how they give a lending ear to customers; and the extent to which current information on customer expectations, perceptions and future needs are captured. The researchers recommended managers to organize periodic and systematic assessment and evaluation of service quality in their organizations in order to identify strength and weaknesses. It was finally concluded that since customer gap is the basis for increasing customer satisfaction and customer loyalty, proactive actions by managers could advantageously position the business organizations.

The determination of the salient dimensions of service quality for motor vehicle after-sales service is the yardstick for relationship quality development. This assertion was made by Saidin, Mokhtar, Saad and Yusoff (2015) in a paper: "Automotive After-sales Service Quality and Relationship Quality in Malaysian National Car Makers." The authors add that relationship quality could push an organization back to top position it once occupied. The study was carried out in Malaysia as a case study for the Malaysian car maker Perusahaan Otomobil Nasional Berhad (Proton). The main objective was to extend the knowledge content in the research area by regrouping SERVQUAL into customer service and tangibility. Thus responsiveness, assurance, empathy and reliability were considered as one discrete dimension and tangibility also as a single dimension. Three hypotheses were investigated as: one, there is a relationship between customer service and relationship quality; two, there is a relationship between tangibility and relationship quality; and three, there is a relationship between technical quality and relationship quality. The study cited Bouman and van der Wiele (1992); Yieh, Chiao and Chiu (2007); Wong and Sohal (2003); Andreassen and Olsen (2008) as well as Egonsson, Bayarsaikhan and Ting (2013) to justify the two-dimensional categorization of service quality. The concept of technical quality as a Nordic school of thought, against the American school of thought which is based on only tangibles and intangibles were thus considered in the three hypotheses. Though the three hypotheses were not tested, the authors argue, with reference to literature available, that there is enough empirical evidence to show that there is positive relationship between service quality and relationship quality. The researchers, however, add that relationships could only exist when service quality is delivered by the service provider. Nevertheless, the conclusion was that, service quality may result to dissimilar degree of relationship quality in the motor vehicle after-sales service sector in the Malaysian auto-maker industry.

Researching on the topic "Service Quality, Customer Satisfaction and Loyalty in Automobile Repair Services Sector," the purpose of the study was to explore the structural dimensions of SERVQUAL in the context of non-western environment (Izogo & Ogba, 2015). The influence of service quality dimensions on customer satisfaction and customer loyalty was also explored. The objectives of study led to the proposition of three hypotheses. These are, first, there is a strong positive relationship between service quality dimensions and customer satisfaction; second, there is a strong positive relationship between service quality dimensions and customer loyalty; and third, there is a strong positive relationship between customer satisfaction and customer loyalty. A 32-item Likert rating scale self-administered questionnaire with 7= "very strongly agree" and 1= "very strongly disagree" at extreme ends, was used to collect data for analysis. Statistical tools employed involve principal component

analysis (PCA) for factor analysis with Varimax rotation, and Y- test for association between parameters to obtain strength, direction and relationships among service quality dimensions and customer satisfaction on one hand and loyalty on the other. Out of the 384 questionnaire distributed, 215 were used for the analysis at a response rate of about 56%. Demographic features of respondents were age, gender, marital status and monthly income.

Data suitability was first analyzed through Kaiser-Meyer-Olkin (MO) correlation matrix, Bartlett's test of sphericity, Kaiser's criterion and Cronbach alpha. Twenty six out of the 32 items was extracted under six components namely; empathy, reliability, tangibles, responsiveness, commitment, and satisfaction/loyalty. About 62 percent of the total variance was explained by the six variables. It should be noted, that commitment is not a dimension of the original SERVQUAL model, while assurance, a component of the original SERVQUAL model could not contribute to the 62 percent total variance. The study revealed that the SERVQUAL scale is a reliable and valid scale and invaluable in the measurement of service quality dimension levels. Thus many a scale construction beginner interested in measuring motor vehicle service quality will find it very useful. The authors argued that the dimensions of service quality are less universal and therefore specific for different contexts. They concluded that using the original SERVQUAL dimensions could be disappointing.

The study also found that it is a waste of time to measure customer satisfaction and customer loyalty separately since satisfied customers are loyal customers. Besides, the study revealed that, customers were not satisfied with tangibles and responsive dimensions of service quality among automobile repair service firms in Ebonyi State in Nigeria. The study therefore recommended that future researchers could rely on the modified scale in the context of automobile repair service quality, customer satisfaction and loyalty in non-western (emerging services) countries. The authors further recommended the need to test the new scales across other services sectors and to confirm the use of a single scale to measure customer satisfaction and customer loyalty.

### **3.4 Determination of Service Quality Dimensions**

The objective of the paper "Assessment of Service Quality Dimensions: A Study in a Vehicle Repair Service Chain" was to identify which service quality dimensions are most important to customers within the vehicle repair process (Miguel, da Silva, Chiosini & Schützer, 2007). It was also to determine the type and degree of service delivered to customers. A multinational service chain Company that deals with repair and maintenance of braking systems, steering wheel systems, clutch and gearing systems, suspension systems, in-built safety systems, among others toward about 20,000 customers per month and an annual revenue of over US\$20 million was used as a case study. Relying on the SERVQUAL model, a ten dimensional model for service quality was used as an instrument to collect the data (tangibles, responsiveness, credibility, competence, understanding/knowing, reliability, communication, assurance, courtesy and access).

A Ten-item questionnaire was adopted for the study, employing a 9-point Likert scale ranging from 1= "extremely poor" to 9= "extremely high" (Parasuraman et al, 1994). The questionnaire had a three-column format with separate ratings. The columns were "expected" (E), "perceived"(P), and "minimal acceptable,"(M), each with a 9-point Likert scale. While "P" minus "E" measures the degree and magnitude of service quality, "minimal acceptable" deals with the relevance of the dimension. The authors dwelt on the work of Rea and Parker (2002) to randomly select 377 customers and all the 100 managers across the country (Brazil). However 500 customers were targeted. Telephone and posting media were used to

get respondents access to questionnaire. A pilot study was organized to test and clarify the structure of the instrument. As a survey, both validity and reliability tests proved favorable. Minitab™ software was used for processing and analysis of data. One hundred and five (105) and 21 questionnaire were returned by customers and managers respectively, an overall response rate of 21% (Furtrell, 1994). Results showed that Cronbach's alpha for managers and customer were 0.867 and 0.916 respectively. The study also gave negative values for all ten dimensions (tangibles, responsiveness, credibility, competence, understanding/knowing, reliability, communication, assurance, courtesy and access). Negative values were also obtained for both managers and customers.

Table 2 displays the rankings of the five most important dimensions of service quality as perceived by both managers and customers. Figure 3 also shows the perceived performance by customers and managers.

**Table 2: Ranking on importance of dimensions**

Managers		Customers	
Dimension	Rank	Dimension	Rank
Responsiveness	1 <sup>st</sup>	Assurance	1 <sup>st</sup>
Courtesy	2 <sup>nd</sup>	Credibility	2 <sup>nd</sup>
Credibility	3 <sup>rd</sup>	Courtesy	3 <sup>rd</sup>
Assurance	4 <sup>th</sup>	Competence	4 <sup>th</sup>
Reliability	5 <sup>th</sup>	Communication	5 <sup>th</sup>

**Source:** Miguel et al (2015).

**Table 3: Ranking on perceived performance by customers and managers**

Managers		Customers	
Dimension	Rank	Dimension	Rank
Tangibles	1 <sup>st</sup>	Reliability	1 <sup>st</sup>
Courtesy	2 <sup>nd</sup>	Tangibles	2 <sup>nd</sup>
Reliability	3 <sup>rd</sup>	Competence	3 <sup>rd</sup>
Customer understanding	4 <sup>th</sup>	Access	4 <sup>th</sup>
Assurance	5 <sup>th</sup>	Credibility	5 <sup>th</sup>

**Source:** Miguel et al (2015)

The relevant results of the study, according to the authors were that, with regards to managers, the most important service quality parameter was assurance and responsiveness to customers. Both managers and customers agreed to tangibles and reliability as the best performance parameters. In addition, the study indicated a significant difference in assessment between managers and customers as reported in other literature (Miguel et al, 2015). Limitations of study include small sample size and limited statistical analysis in order to increase reliability and external validity.

A research paper entitled "Investigating Service Quality Dimensions in South African Motor Vehicle Servicing" by Adele Berndt in 2009, primarily aimed at determining the nature of service quality in the motor vehicle industry (Berndt, 2009). The secondary objectives were: to determine customer perceptions in the context of service quality dimensions; to ascertain

the existence of service quality dimensions in the motor industry; and to identify common dimensions of service quality if available.

The SERVQUAL instrument was used though the questionnaire had three sections: biographical, SERVQUAL and perceptions on relationship quality. A convenience sampling method was employed to select the subjects through personal contact. A total of 761 questionnaires were self-administered at a response rate of 100% as a result of personal contact with the respondents. The demographic profile of the respondents include age, gender, highest educational attainment, type of vehicle owned, type of dealership, number of years vehicle has been owned and the number of vehicles owned. The Varimax rotation analysis showed that the five dimensions accounted for 57.9% of the responses with factor loading exceeding 0.4 (Bradley, 2007). The reliability test using Cronbach's Alpha quality ranged between 0.773 and 0.908. These are comparable with those of Berndt and Herbst (2006) and Bouman and van der Wiele (1992) and were therefore acceptable.

Analysis identified five factors/dimensions of service quality as customer-focus, tangibles, delivery quality, communication and customer care quality. The author concluded that the newly identified dimensions do not coincide with those of Parasuraman et al (1988)(Tangibles, Reliability, Responsiveness, Assurance and Empathy in the SERVQUAL model) with the exception of tangibles. The author acknowledged the persistence of tangibles in most studies and the existence of communication and delivery as components of service quality in two studies relating to South African motor vehicle repair industry. Also, the identification of delivery quality, communication quality and customer care quality was evidential to suggest that further research is needed for clarification. The study recommended that since customer focus was the most important dimension, organizations should pay more attention to customers' needs and attend seriously to customer complaints, requests and demands. Furthermore it was recommended that managers and employees should be customer-centric by exhibiting empathetic and assuring behavior towards customers in order to gain competitive advantage over probable competitors.

A paper "Developing the Models of Service Quality Gaps: A Critical Discussion" was written by Arash Shahin and Monireh Samea with the aim of modifying the existing service quality gap models into a more comprehensive one (Shahin & Samea (2010)). Thus new components were introduced with corresponding gaps into the proposed model. Sixteen experts comprising nine from universities and seven managers from non-governmental service organizations participated. A self-administered questionnaire was employed. Before the questionnaire was filled, definitions of new gaps and reasons for which they should be included in the model were provided with explanation. A binomial test was used to test a hypothesis as to whether each of the components should be included on individual basis. Opinions were provided by ticking agree (1) or disagree (0) for individual gaps. Both significance levels and test of proportion were satisfactory, less than 0.05 and 0.5 respectively. At confidence level of 0.95 and agreed portions more than 80% the authors arguably concluded that the proposed gaps and corresponding components could be important components of the new model. The authors therefore proposed five new components, and eight new gaps into the original Parasuraman et al (1988) model.

The new components, are ideal service standards; service quality strategy and policy; translation of service quality strategy; translation of policy into service quality specifications and service design; management perceptions of customer perceptions (refer Figure 1). The new gaps include gap 2 ("The difference between management perceptions of customer

expectations and service quality strategy”); gap 3 (“The difference between service quality strategy and service quality specifications”); and gap 4 (“The difference between ideal standards and service quality specifications”). Others are gap 5 (“The difference between external communications and service specification”); gap 11 (“The difference between customers’ perceived service and management perceptions of customer perceptions”); and gap 12 (“The difference between management perceptions of customer perceptions and service strategy”). The last is gap 13 (“The difference between customer perceptions and employee perceptions of customer perceptions”).

During the review of literature, Shahin and Samea (2010) identified three important models: service quality gap model by Parasuraman et al (1955); Internal service quality model by Frost and Kumar (2000) and model of service quality by Luk and Layton (2002). While Parasuraman et al (1985) model has 5 gaps, and 9 components, Frost and Kumar model has 3 gaps and 5 components. On the other hand the Luk and Layton model comprises 6 gaps and 10 components. The proposed model however consists of 14 gaps with 14 components. In conclusion, the authors agreed to the fact the inspite of its comprehensiveness the model is fret with some difficulties. These include verification and validation of the model and the greater difficulty and challenges in measuring the higher number of gaps since the five gaps in the Parasuraman et al (1988) model already poses serious challenges. Developing questionnaires to measure the gaps is another challenge. The authors, therefore, suggested further research in this area.

Berndt (2009) in reviewing literature identified other methods that could be used to measure quality. The Technique for Order Preference by Similarity to Ideal Solution commonly referred as TOPSIS was developed by Mukherjee and Nath (2005). TOPSIS is used to identify and select the characteristics of service that influences customer satisfaction. It assists an organization in the determination of both ideal worst attributes and the ideal best attributes. The algorithm attempts to select a solution that entails “the shortest distance from the positive ideal solution and the longest distance from the negative ideal solution (Lai, Liu & Hwang, 1994; Mukherjee & Nath, 2005). The other method identified by Berndt was the Service Quality Loss Method also referred as the Loss Function. These two models were identified to be applicable in the context of motor vehicle service industry.

The “Measurement of Service Quality of an Automobile Service Centre” (Katarne, Sharma & Negi, 2010), as a research topic, had general objective of measuring the service quality level of an automobile service centre. However, the specific objectives were two-fold. First, to determine the causative factors of dissatisfaction in the service centre; and second; and to give suggestions to solve these challenges. The SERVQUAL model was adopted in spite of techniques like TOPSIS and SERVPERF (Service performance based on perception only measurement of customers). Presenting questionnaire to customers in a survey, the following factors were identified to importantly influence service quality of the service centre, namely: behavior of the service advisor; response at billing customers and delay of vehicles. Others were commitment of sales person; hospitability; and cleaning of vehicles, among other minor factors. The study was carried out in India.

Results indicated great dissatisfaction among customers with regard to delay of vehicles (54% of customers). As a reliability factor, the authors argued that reliability is the most importance dimension in corroboration with Parasuraman et al (1988). Analyzing service vehicles to ascertain the root causes of the delay in the centre, the study revealed 50% of delays from over-loading. Other causes include washing, billing and unavailability of parts.



The rest were breakdown and electrical failure, among others. In order to improve service quality, the authors suggested capacity building through human resources and technology change in addition to increased working hours through a shift system.

Haq (2012) also researching on the topic “Satisfaction towards Customer Loyalty in Automobile Industry of Pakistan”, rather had objectives being investigating into the impact of the ECSI model on customer loyalty as: to re-explain the ECSI model with the introduction of two dimensions, namely, customer education and customer trust, and to investigate the influence of ECSSI elements on customer loyalty. The major components of the new model include perceived values, perceived quality, customer expectation, customer trust, customer education, customer satisfaction and customer loyalty. It should be noted that perceived quality and customer expectation directly influence service quality (i.e. perceived values) which indirectly influence customer loyalty through customer satisfaction (Parasuraman et al, 1985).

The study was designed by organizing a pilot study of 55 respondents. The actual study distributed 275 out of which 226 responded (82%). Email, direct distribution and registered post were employed. Few face-to-face meetings were organized. A five-point Likert scale was employed to score respondents. Forty constructs were generated for seven variables with overall reliability of 86.9 percent. Data was analyzed employing the structural equation model, AMOS. Demographic characteristics of respondents involved age, gender and type of customers (e.g. individual, institutional, etc.). Using chi-square test, the overall model was significant. Out of the 11 proposed hypotheses tested, 9 were accepted. The three rejected were: one, customer expectation has a positive effect on perceived value; two, customer trust has a positive effect on customer service; and three perceived quality has positive effect on customer satisfaction. The accepted hypotheses were: perceived value has a positive effect on customer satisfaction and customer expectation has a positive effect on customer satisfaction. Others were customer education has a positive effect on customer satisfaction; customer satisfaction has a positive effect on customer loyalty; customer education has a positive effect on customer loyalty; and customer trust has positive effect on customer loyalty. The author concluded that the proposed model supports the hypotheses and that the ECSI model is valid, reliable and significant. The author further recommends larger sample sizes and introduction of new variables into the model in future studies.

#### **4. Conclusion**

The aim of the study was to review research papers from 16 individual studies from various researchers. The papers were categorized in three. One, influence of independent dimensions on service quality; two, influence of service quality on dependent parameters; and three, determination of service quality dimensions through modeling. Review of individual papers was done as recorded in the papers. Emphasis was on aim and objectives of reviewed papers, methodology, findings and conclusion of authors. Relevant suggestions for future research and recommendations were also included. The study appears to show that SERVQUAL continues to be the most popular method of assessing the quality of service in the motor vehicle maintenance and repair industry. The study also revealed that service quality influences parameters such as customer satisfaction, customer loyalty, business models and relationship marketing among others. The study further revealed that generally, one or more of the five dimensions; tangibles, reliability, responsiveness, assurance and empathy, may influence service quality. Other attributes, aside the five dimensions, appear to directly or indirectly affect one or more of the five dimensions in the motor vehicle maintenance and repair industry. The study concludes that the 5-dimension model may not be universal per se

but may best be described as the closest to an ideal model which can be used as a basis for other subsequent models within the industry. Thus the full constructs of the 5-dimension service quality conceptualization model when critically and carefully analyzed on comparative basis to newly-proposed or suggested models, in the industry, appear to go a long way to support its closest-to-the-ideal nature.

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