UNIVERSITY OF EDUCATION, WINNEBA

COLLEGE OF TECHNOLOGY EDUCATION - KUMASI

ASSESSING THE SERVICE QUALITY OF ROADSIDE AUTO GARAGES COMPARED TO THE STANDARD GARAGES IN GHANA. THE CASE OF CAPE COAST METROPOLIS

DANIEL KWASI ANSAH

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NOVEMBER, 2016

DECLARATION

STUDENT'S DECLARATION

I, **Daniel Kwasi Ansah** declare that this dissertation, with the exception of quotations and references contained in publish works have all been identified and duly acknowledged, is my entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE…….

DATE: ……

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of dissertation as laid down by the University of Education, Winneba.

NAME OF SUPERVISOR: PROFESSOR MARTIN AMOAH

SIGNATURE: ……

DATE: ……

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DEDICATION

This dissertation is dedicated to my wife Mrs. Ellen Ayisibea Ansah and my sons Nana Kwaku Ansah, Kwame Owusu Ansah and Kobina Koranteng Ansah whose prayers, support and understanding gave me the encouragement to finish this master of technology education programme successfully.

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ABBREVIATIONS

ASQ	American Society for Quality
COTVET	Council for Technical and Vocational Education and Training
GSS	Ghana Statistical Service
GUSS	Ghana Universal Standard Survey
GDP	Gross Domestic Product
KEEA	Komenda Edina Eguafo Abrem
MS	Microsoft
NADA	National Automobile Dealers Association
NRSC	National Road Safety Commission
NVTI	National Vocational Training Institute
OBD	Onboard Diagnostics
OFT	Office of Fair Trade
SME	Small Scale Enterprise
SPSS	Statistical Package for Social Sciences
TQM	Total Quality Management
TVET	Technical and Vocational Education and Training
TV	Television
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United State of America

ABSTRACT

The automobile repair industry is chosen for this research because it is considered as one of the most important and strategic industries that support all sectors of the economy. The main purpose of the study is to do assessment of service quality of roadside garages compared to standard auto garages in Ghana. This study adopted the case study strategy and used questionnaires to gather data. The targeted population for the study was three hundred (300) which was made up of costumers of auto garages (commercial drivers, private drivers, and transport managers), workshop managers, and master mechanics of both the standard and roadside garages in the Cape Coast Metropolis. Thus 70 customers and 27 mechanics, from standard and road side garages were sampled using random sampling methods. The SPSS version 18, MS Word and MS Excel was used to analyse the data. Data was presented in tabular form. The study revealed that a large number of the auto-mechanics in both the roadside and standard garages have considerable years of auto repair working experience, but the roadside garages lack the ability to diagnose and repair modern automobile vehicles due to low educational and technical levels. The study also revealed that the basic hand tools were available at both roadside and standard garages; however, only the standard garages had diagnostic and power equipment in the cape coast metropolis. The major findings concluded that the challenges facing roadside garages are difficulty in securing funding for operations, inadequate facilities to organise in-service training to upgrade the skills of mechanics, difficulty in acquiring land for the establishment of garages. The government should provide funding to both road side garages and standard garages to enhance their operations. Institutions and all stakeholders in the automobile industry should be adequately resourced to periodically organise in-service training to upgrade the skills of the mechanics.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The transport sector is estimated to have grown by 7.0% in 2009 compared to 8.9% in 2008 as reported by the Ghana National Commission for UNESCO, 2010. According to the report, road transportation system in Ghana is predominant, accounting for 94% of freight and 97% of passenger traffic movements. The land transportation system compared to water, air as well as other modes of transportation is the most largely used in Ghana, and therefore the use of automobile vehicles, cannot be over emphasized (Akinola,1995). Road transportation plays a vital role in the overall economy of Ghana. According to Ghana Statistical Service, (GSS), report (2014), Ghana"s transport sector alone contributed 6% of GDP to the economy. This means that, the use of automobile vehicles on our roads plays a key role in road transportation system. African development outlook (2005) indicates that at all levels of development, small and medium size enterprises (SMEs) have a significant role to play in the economic development in general and in industrial development in particular. SMEs form the backbone of the private sector, make up over 90% of enterprises in the world and account for 50 to 60% of employment. The African Economic outlook (2005) report indicated that Small and Medium Enterprises (SMEs) in Ghana are the focal point of the government efforts to spur growth and reduce poverty.

Statistics available by the (GSS, 2010 census) indicates that the private sector is the largest employer in the country, accounting for 93.1 percent of the economically active persons (private informal, 86.1% and private formal, 7.0%). The public sector, which is the second largest employer, accounts for only 6.3 percent. The private informal sector

remains the largest employer of the working population irrespective of sex and region of residence. The (GSS, 2014) report shows that trade, repair of vehicles and household goods also contributed about 4.9% to GDP of the Ghana‟s economy. This indicates that vehicle repair contributes a lot to the Ghana‟s economy. It is evident by the report that the roadside mechanics or garages which belong to the private informal sector form the majority in the provision of maintenance services for motor vehicles in Ghana.

Mensah (2004) revealed that Road Side Garages serve as the catalyst for the economic growth of the country since they serve as the major source of income and employment. These assertions mean that Road Side Garages play pivotal role in the economic development of Ghana. Road Side Garages of the automobile service centres are found in both urban and rural areas, and cover wide spectrum automobile vehicle service activities. In a competitive world a well delivered service quality is a key to compete globally. These road side garages service need to compete globally, providing quality service is necessary to increase productivity. The automotive repair industry is chosen for this research because it is considered as one of the most important and strategic industries that support both the manufacturing and the service sector. Thus, there is the need for automobile service industry, comprising of the road side auto garages to conform to the quality standard in order to provide good quality service for customers.

Osman *et al.* (2009), described quality as a term that carries an important meaning to both producer and customer. Many organisations in today‟s automobile industries have realised that it survival in the business world depend highly on bringing high quality product and services to their customers. Indeed, the global competition has compelled some companies and organisations to have stressed that, quality should have to be put in place and be integrated into all aspects of products and services in their management system. Adopting a quality culture through the implementation of quality management

initiatives in all aspects of the business by concentrating towards building a continuous improvement culture based on resources (financial and human) and meeting the customer needs are pertinent for business success. Therefore, quality has become increasingly popular managerial device to improving customer satisfaction and retention. Osman *et al.* (2009) describes their concern towards total quality management (TQM) in the road side garages of the automobile industry as being crucial to the general quest for quality-serviced cars and the increasing competition between the local car service garages and the standard car service garage. Quality in the essence that, surviving in the industry will depend on the quality of service delivered to prospective customer. In a competitive industry, such as the automobile industry, customer service makes the difference between a firms overall success and failure. When poor service is experienced, both the firm and the customer are negatively impacted, the customer receives poor service and the firm loses future potential sales.

Rajnish and Satyendra (2010) stated that, quality of service rendered is at the core of the success of any service firm, and the automobile service dealership industry is no exception. In addition, customers are much concerned about quality of after sales service received irrespective of the service dealership. In the motor industry, it is standard practice for vehicle manufacturers to conduct ongoing research to monitor customer perceptions of the quality of the service provided by their dealers, namely the franchised vehicle retailers. Quality is a multi-dimensional phenomenon. Thus, reaching the service quality without distinguishing the important aspects of quality is impossible. In his discussion of service quality, Gronroos (2000) refers to three dimensions of output technical quality, service performance quality, and organization‟s mental picture (image). Also, Lehtinen and Lehtinen (as cited in Harrison, 2000) have referred to dimensions of physical quality, interactive quality, and organizational quality as three dimensions of service quality.

It is therefore important to make a comparative analysis of the service quality of the road side and standard automobile service industry in Ghana so that there can be continuous improvement of service quality in order to fulfill customers' satisfaction. The need to fulfill customers‟ satisfaction depends significantly on the performance, reliability, responding to customers' needs and wants and continuous improvement. Focusing on the local automobile fitting shops, this research is focused on identifying the challenges that road side garages face and determining measures to address these challenges in order to meet the expectations of customers in the provision of quality services in the maintenance of motor vehicles in Ghana. This area of investigation has not been given full attention in automobile industry in Ghana.

1.2 Statement of the Problem

In Ghana automobile vehicle repair services can be obtained from two main garages. These include standard garages and the local/road side garages. Whereas the standard garages are known to be dealing with dealership vehicles and operate within certain standard, the local/road side garages known as “kokompe “ workshop deals with variety of vehicle and operate without standard. These kokompe workshops according to Amoafo (2012) play a pivotal role in the economy of Ghana. A report by the ministry of transport, 2012, shows that the world vehicle population in 1986 was 500 million but passed the one billion unit mark in 2010, thus the total number of cars in the world as at 2010 stood at 1,015,260,827. The report states that the vehicle population ratio in Ghana has been growing steadily from 31 vehicles per 1,000 population in 2002, to about 44 vehicles per 1,000 population in 2008.

Statistics available from the Customs Exercise and Preventive Service (CEPS) as coated by Baidoo et al (2015) indicates that an average of 70,146 vehicles is imported into

Ghana yearly. Compliment to these statistics from Baidoo, a report by Nation Road Safety Commission NRSC, 2014 indicates that vehicle Population in Ghana as at 2012, stands at 1.5 Million. With the increase in vehicle population in Ghana, the need to establish many auto repair garages to provide quality maintenance services to these vehicles cannot be over emphasized. In Ghana, only few dealership and standard auto service workshops such as Toyota, Japan motors, Silver Star, Mechanical Lloyd, among few others are available to provide quality maintenance and repairs for motor vehicles despite the large number of vehicles imported into the country every year.

Ironically, only few branches of these standard repair garages are available in some regional capitals. This means that many car owners have to travel long distances before accessing the services of these standard automobile garages. Owing to this, most vehicle owners find it difficult to patronize the services of the standard or dealership auto repair garages, and therefore depend on the Local/Roadside Garages as their auto repair shops. The local automobile workshop therefore serve as an alternative source of providing vehicle maintenance and servicing to the large number of vehicles imported into the country every year in addition to the number of vehicles already in the country. Service quality has become an important issue of discussion for organizations to compete in today's business environment. It is important not only in terms of providing a long term success to the company, but also it is imperative element of providing competitive advantage towards fulfilling customer's expectations and company's performance (Baidoo, 2015). According to Cronin and Taylor (1992) “service quality is an elusive and abstract construct that is difficult to define and measure”.

Motor vehicles are one of the systems which are considered enough complexes, which consist from a large number of subsystems. The rapid development of the technology in vehicle has prevented the development of quality maintenance in the

vehicle. These difficulties have influenced vehicle maintenance to rank in the group of complex technical systems (Xhemajl, Naser, Bashkim & Hajredin, 2012).

It is a common knowledge that most of the auto mechanics of the Local Garages in the Ghana find it extremely difficult to diagnose faults, repair and maintain modern electronics vehicles. Most customers who visit these Local Garages with their modern electronics vehicles to maintain them rather leave the shop with more complex problems. However, these Local Garages play very significant role in the automobile industry in Ghana. Quality maintenance management should be focused on improving the life expectancy of the vehicles, vehicle safety, readiness of the vehicle and environmental protection (Xhemajl, *et al,* 2012).

Lindsay (2013), Stated that around 1970s and 1980s roadside mechanics used what is termed the „try and error" to repair almost all automobiles. Rapid development of automobile technology has presented some challenging problems for roadside mechanics in the country. Ribbens (1998) noted that the use of scan tools like On-Board Diagnostic, One, Two and Three (OBDI, OBDII, and OBDIII) are very common in the repair of automobile in many well equipped service centres today. The automobile services industry, which provides "car servicing, mechanical repairs, car body repairs and breakdown and recovery services" (Brito *et al*, 2007) has however not been given much attention as far as service quality is concern. It is therefore imperative to research into the maintenance service quality of the Local Auto Garages, in order to identify their challenges vis-à-vis the Dealership or Standard Garages and determine the best maintenance practices so as to address these challenges to enhance their performance and quality.

1.3 Purpose of the Study

The main purpose of the study is to do an assessment of service quality of road side garages using the standard auto garages as a bench mark in Ghana.

1.4 Objectives of the Study

The main objective is to identify the challenges of the Roadside Garages in providing quality service, as compare to the Standard Garages and to determine the best maintenance practices that are aimed at addressing these challenges to enhance their performance.

The specific objectives of this dissertation are:

- To assess the service quality of Standard and Roadside Garages in vehicle maintenance.
- Determine the best maintenance practices that will improve service quality of the Roadside Garages in vehicle maintenance.
- To identify possible challenges affecting service quality of the Roadside Garages in vehicle maintenance.

1.5 Research Questions

The study is guided by the following research questions:

1. What is the service quality of Standard and Roadside Garages in vehicle maintenance?
2. What are the best maintenance practices that will improve service quality of the Roadside Garages in vehicle maintenance?
3. What are the possible challenges affecting service quality of the Roadside Garages in vehicle maintenance?

1.6 Significance of the Study

The study will help the Roadside Auto Garages to adopt the best maintenance practices and ensure their efficient operation in order to provide quality maintenance of motor vehicles in Ghana. It will also help the Standard Garages to identify opportunities to expand their workshops or establish new ones in other cities and towns. This research work is critical because, if the challenges confronting the Local Road Side Garages continue to exist, and ways of mitigating their impact are not identified, then many individuals and institutions will be negatively affected in their day to day activities. This is because many car owners, drivers and institutions continue to patronize the services of these Local Roadside auto garages.

The study will bring to light the significance of upholding quality as a means of offering satisfaction to vehicle owners during the active period of use of the vehicle. Again the study is also significant at the level of policy making. Policy makers and technocrats within the country"s institutions and ministries will benefit from the study, which provides recommendations for policy reforms. The findings of this research will help transport managers, workshop managers and technical personnel of other institutions and transport companies to adopt the necessary maintenance management strategies, in order to improve upon the quality of maintenance to enhance the operation of vehicles and also continue offering high-quality and reliable services to the people of Ghana.

In the era where technical vocational education and training (TVET) is becoming the order of the day, graduates of Technical Institutions, Polytechnics and technical Universities are likely to use these roadside auto workshops or garages as their training centres.

The research will also help in reducing road accident on our roads since poor vehicle maintenance can lead to accident. It will also help students, academicians as well as researchers, as it will augment the body of knowledge in the field of engineering especially automobile engineering.

1.7 Scope of the Study

The study is expected to cover customers of vehicle owners, drivers, and mechanics and service managers of both standard and local roadside auto garages in the Cape Coast Metropolis. The study is also limited to automobile services only. This involves the maintenance, repair and general care of vehicles. This study is limited to the dimensions of service quality in vehicle maintenance only. In addition, this research work and analysis is based on the customers, drivers, service managers and mechanics point of view.

1.8 Limitations of the Study

Although this study has a number of strengths, some limitations or shortcomings are acknowledged. Lack of cooperation on the part of some respondents was a limitation in this research. This was due to the unwillingness of the respondents to give responses because of time the researcher engaged them and also due to the fact that they were busy working. Some were more interested in knowing the benefit they would get such as money and clothing from answering the questionnaire and as such demanded that their names and telephone numbers be written down. One major limitation was that most of the respondents had little or no education to read and answer the questionnaire on their own. The researcher took extra time to translate into “Fante” and explain the questions to those who had no education and also clarify some questions to those who had little education. This however does not invalidate the total outcome of the research.

1.9 Organisation of the Study

The study will be organized into six main chapters. Chapter one will be the introduction, background, problem statement, aims and objectives of the study. The second chapter will review literature relevant to the topic under study. Whereas chapter three will deal with methodology and research instrument required for the study, chapter four will be used to present the analysis of the study. Chapter five was used to discuss the results that may come up of the research. Chapter six contains the summary, conclusions and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter will critically review relevant literatures that are related to the study under consideration in order to uncover critical facts and findings which have already been identified by previous researchers and numerous studies in the service quality of motor vehicle maintenance. It is important to review literature due to the fact that *"Knowledge does not exist in a vacuum and your work only has value in relation to other people. Your work and your findings will be significant only to the extent that they are the same as, or different from, other people's work and findings"* (Jankowicz, 2005 as cited in Datsomor, 2012, p.7).

2.1 The Automotive Industry

The automotive industry is the industry involved in the design, development, manufacture, marketing, and sale of motor vehicles (Kim Hung Tsang, 2008). Tsang revealed that in 2007, more than 72 million motor vehicles, including cars and commercial vehicles were produced worldwide. In this same year, 17 million new automobiles were sold in the USA, 16 million in Western Europe, 8 million in China, and 2 million in India. According to National Automobile Dealers Association (N.A.D.A), in the US, as of 2006, the industry included about 21,200 new-car dealerships, 1.07 million manufacturing employees and 1.12 million retail new and used car dealership employees.

2. 1.1 The Automobile Repair industry in Ghana

In Ghana, repairs to motor vehicles are undertaken in either of two places: dealer (formal) or standard garages and roadside (informal) garages. Mechanics in the informal sector perform the bulk of the repairs yet most of them do not have the right equipment and many have had no formal education in repairs of motor vehicles. With changes in motor vehicle technology, the mechanics have not kept up with the changes and this has had a negative impact on the quality of the repairs they undertake on motor vehicles. This calls for development of new policies and incentives for the informal sector that can take care of and respond to technological changes. Majority of the roadside garages are found in urban centers (Wanyeki, 2014). This is because in urban centres is where most motorists are found and also where supporting businesses (spare part shops, petrol stations, etc.) are found. Those garages located in the outskirts of town are to be found in the densely populated estates and this is because the high rate of unemployment in such estates forces many people to start roadside businesses including garages. A majority of the roadside garages are located in temporary workshops. This could be attributed to the ownership of the plots within town in that most roadside garages rent the places they are using and therefore cannot make permanent improvements on the plots (Wanyeki, 2014).

The motor vehicle maintenance and repair industry (garage industry) play very significant role in every sector of the economy. By taking a few examples of aspects of modern life, it is possible to gain an insight into areas of activity where motor vehicle maintenance and repair plays an important part (Bonnic & Newbold, 2005). According to them, one has only to consider the effect of a vehicle breakdown in any of these areas to gain an appreciation of the part that motor vehicle technicians play in the day-to-day operation of society when they maintain and repair vehicles. They further explain that in

order for these activities to take place, the vehicles must be serviced and maintained at regular intervals and, in the event of a breakdown, action must be taken to clear the road and repair the vehicle so as to restore it to good working condition, as quickly as possible. In the UK it is the motor vehicle repair and maintenance industry that performs the bulk of vehicle maintenance and repair work. According to Bonnic and Newbold, 2005, there are approximately 30,000,000 vehicles of various types in use in the UK in 2004 and a large vehicle repair and maintenance industry exists to provide the necessary services.

The majority of motor cars are repaired and maintained in retail garages and businesses vary in size, from large-sized vehicle dealerships employing several people in a range of occupations to small one man type businesses. Buses tend to be cared for in specialised workshops operated by Local Authorities and specialized bus companies. The repair and maintenance of heavy goods vehicles is often carried out in garage workshops that are owned by transport companies. The garage industry employs several hundred thousand people in a range of occupations. The work is interesting, often demanding –both physically and mentally (Bonnic & Newbold, 2005). There are many opportunities for job satisfaction. For example, it is most rewarding to restore a vehicle to full working condition after it has suffered some form of failure. There are opportunities for promotion, technicians often progressing to service managers and general managers, or to run their own companies (Bonnic & Newbold, 2005).

The Office of Fair Trading (OFT) report for the year 2000 as coated by Bonnic and Newbold, shows that more than 50% of cars were more than 5 years old. These cars require annual MOT inspections and there is a tendency for them to be serviced and repaired in the independent sector of the industry. The OFT report shows that there are

approximately 16 000 independent garages and 6 500 garages that are franchised to one or more motor manufacturers. Evidently there are plenty of opportunities for employment.

2.2 Service Quality

2.2.1 Service

The Microsoft Encarta (2009) defines service as work done for the customers of a store, restaurant, hotel, or similar establishment, often with regard to whether it pleases them or not. The dictionary defines „service" as an organized system of appliances, products, personnel and other resources to supply activities needed to satisfy a public or private need. Insurance, banking, catering, lodging, travel and entertainment activities are traditionally considered as service industries. TV repair service, vehicle repair service, product maintenance services, and even massage service in recent times are listed as service functions.

However, the goals and the meaning of the service functions have broadened. In modern parlance, service is the work performed directly or indirectly to satisfy the needs required by customers.

Service functions are delivered or discharged by service providers at the request of customers. Service providers who cater to customer needs and requests satisfy the preferences, needs and conveniences sought by customers. Services must be easy to call on, responsive and dependable. They must be competitive in costs, easy and reliable to use. Service offerings must be up to date (Chitoor, 2000).

2.2.2 Quality

According to Vroeijenstijn (1985) the concept of quality is not new: it has always been part of the academic tradition. It is the outside world that now emphasis the need for

attention to quality. It is the relationship between higher education and society which has changed. Quality is perceived differently by different people. Yet, everyone understands what is meant by "quality." In a manufactured product, the customer as a user recognizes the quality of fit, finish, appearance, function, and performance. The quality of service may be rated based on the degree of satisfaction by the customer receiving the service. The relevant dictionary meaning of quality is "the degree of excellence. However, this definition is relative in nature. The ultimate test in this evaluation process lies with the consumer. The customer‟s needs must be translated into measurable characteristics in a product or service. Once the specifications are developed, ways to measure and monitor the characteristics need to be found. This provides the basis for continuous improvement in the product or service. The ultimate aim is to ensure that the customer will be satisfied to pay for the product or service. This should result in a reasonable profit for the producer or the service provider. The relationship with a customer is a lasting one. The reliability of a product plays an important role in developing this relationship.

2.2.3. Quality is fitness for use.

This definition stresses the importance of the customer who will use the product. Deming (2000) defined quality as follows:

Good quality means a predictable degree of uniformity and dependability with a quality standard suited to the customer. The underlying philosophy of all definitions is the same – consistency of conformance and performance, and keeping the customer in mind. Another definition that is widely accepted is Quality is the degree to which performance meets expectations. This definition provides a means to assess quality using a relative measure. We provide here the definition adopted by the American Society for Quality (ASQ): Quality denotes an excellence in goods and services, especially to the degree they conform

to requirements and satisfy customers. This definition assimilates the previous ones and is our definition of choice.

Reliability implies dependability – reliability introduces the concept of failure and time to failure:

Reliability is the probability that a system or component can perform its intended function for a specified interval under stated conditions.

Quality and reliability go hand in hand. The customer expects a product of good quality that performs reliably.

2.3 Service Quality

Service quality is a concept that has given rise to considerable interest and debate in the research literature because of the difficulties in both defining it and measuring it with no overall consensus emerging on either (Wisniewski, 2001). There are a number of different "definitions" as to what is meant by service quality. One that is commonly used defines service quality as the extent to which a service meets customers‟ needs or expectations (Lewis & Mitchell, 1990; Dotchin & Oakland, 1994a; Asubonteng *et al*., 1996; Wisniewski & Donnelly, 1996). Service quality can thus be defined as the difference between customer expectations of service and perceived service. If expectations are greater than performance, then perceived quality is less than satisfactory and hence customer dissatisfaction occurs (Parasuraman *et al*., 1985; Lewis & Mitchell, 1990).

Service quality has been defined as the degree and direction between customer service expectations and perceptions (Newman, 2001). Perceived service quality is defined as the evaluation of the service across the episodes when compared to some

explicit or implicit standard (Storbacka et al., 1994). Further, it can be seen as how well a service satisfies the expectations of customers (Bouman & vander Wiele, 1992).

Always there exists an important question: why should service quality be measured? Measurement allows for comparison before and after changes, for the location of quality related problems and for the establishment of clear standards for service delivery. Edvardsen *et al*. (1994) noted that, in their experience, the starting point in developing quality in services is analysis and measurement. The SERVQUAL approach is the most common method for measuring service quality.

There are two main lines of thoughts on measuring service quality (Kang & James, 2004): an American and an European perspective. Brady and Cronin (2001) suggest that the researchers generally adopt one of the two conceptualisations in their work. The focus on functional quality attributes is referred to as the American perspective of service quality while the European perspective suggests that service quality considers two more components. The European perspective considers additional aspects other than the process of service delivery. Grönroos (1984), for instance, noted that the quality of a service as perceived by customers consists of three dimensions: functional (the process of service delivery to customers), technical (the outcomes generated by the service to the customers), and image (how the customers view the company).

Considering those dimensions, the quality of the service is dependent upon two variables: the expected service and the perceived service. More details of the previous argument are provided by Grönroos (1984). Functional quality of a service is often assessed by measures of customers‟ attitudes, as in customer satisfaction questionnaires. As described by Hayes (1997), the process of identifying customers‟ attitudes begins with determining customers‟ requirements or quality dimensions. Parasuraman et al. (1985)

identified in a first study 10 quality dimensions based on a series of focus group sessions. From this study, the authors concluded that customers use the same criteria to assess service quality independently of the type of service for Hayes (1997), however, some quality dimensions are generalised across many services, but some will apply only to specific types of services, and it is necessary to understand quality dimensions to be able to develop measures to assess them. The author explains then two ways of identifying important quality dimensions of services: quality dimension development approach and critical incident approach. The first one uses different sources of information, such as opinions of providers and literature. The other one is a process to obtain information from customers. The 10 determinants of service quality established by Parasuraman *et al.,* (1985) provide a list that can guide investigation on the first approach. The authors subsequently developed SERVQUAL (Parasuraman*et al.,* 1988), a two-part instrument for measuring service quality that was refined later (Parasuraman *et al.,* 1991). Much of the research to date has focused on measuring service quality using this approach and its use has become quite widespread (Brown *et al.,* 1993; Kang & James, 2004).

2.3.1. The concept of quality of a service

There are two main issues shaping studies in the conceptualization of service quality. The first is how consumers evaluate service quality and the second is what influences customers‟ evaluation of service quality. On the first issue, consensuses are that, consumers evaluate service quality based on their perception. This is mainly due to the high level of intangible nature of service outcomes (Zeithaml, 2005; Grönroos, 2001; Parasuraman *et al.,* 1988). However, this makes the concept less objective and less easy for many researchers to digest (Brady and Cronin, 2001). Parasuraman *et al,*1988) define perceived service quality as: “the global judgment, or attitude, relating to the superiority of

the service". The literature establishes that, perceived service quality itself is as a result of a comparison between consumers‟ pre-purchase expectations and the perception of actual service received or experienced from the service provider (Parasuraman *et al,* 1985b, Grönroos, 1984). This is referred to as the expectancy-disconfirmation (Oliver, 1980).

Based on the perception-minus-expectations model, Parasuraman *et al*, (1988, 1991) developed SERVQUAL, an instrument for measuring service quality. The instrument has 22 pairs of items measuring customers‟ expectations of service quality from a particular service industry in one hand and perception of service performance from a particular service provider within the industry, in another. Perceived service quality is thus identified by calculating the difference between perception (P) and expectations (E) at different levels.

Some scholars argue for a performance-only model (SERVPEF) of perceive service quality (Cronin & Taylor, 1992; 1994; Babakus & Mangold, 1992a). One argument is that perceived performance better captures consumers‟ attitude. Babakus and Boller (1992b) also indicate that consumers are unable to distinguish between desires and current performance. As such they tend to always rate their expectations higher than performance. Carman (1990) also shares similar view and further emphasises on the practical difficulties associated with gathering data on expectations.

On the second issue, Zeithaml (2005) states that the notion of service quality is about its dimensions, i.e. that factors on which customers form their perception of service quality. In the view of Zeithaml (2005, p.117), they represent how consumers organize information about service quality in their minds. The writings of Grönroos (1984) Parasuraman et al (1985) and Lehtinen (1983) provide answers to the overriding question of what customers of services see in a service as a need-satisfying solution in the absence of any perceived ready-made product. In other words what are the dimensions of service

quality perceived by service customers? Answers to this question show that consumers of services form their perception of quality on multiple factors or dimensions: Grönroos (1984) identified 3 dimensions as: technical quality, functional quality and corporate image. He explains technical quality as the outcome of the service, i.e. what the consumer gets or receives from the service encounter.

The functional quality of a service quality is the consumer‟s view of how the service is delivered. Since service production and consumption takes place in the presence of the consumer, what happen during the service encounter is also very important to the consumer when evaluating service quality. Contrary to the technical outcome, the functional dimension is subjective and more difficult to describe. Grönroos (1984) also add a third dimension, the corporate image which results from experiencing the company‟s services. In the words of Padma et al (2007, p.160), the corporate image dimension serves as "a filter in consumers‟ perception of quality". The idea is that consumers‟ perceptions which are attitudes and belief are influenced by their experiences with the service company over time. If a good image is held about a service company, this will influence a consumer‟s perception of service quality even during service breakdowns.

Lehtinen and Lehtinen (1991) also identified dimensions similar to that of Grönroos (1984) which explain that service consumers see beyond the outcome of the service 13 rendered to them. Their dimensions include physical quality. These include the tangible outcome as well as the physical environments that enabled the service encounter and the production of the service outcome (e.g. machinery for repair services). Other dimensions include process quality and corporate image. As in the previous cases, Lehtinen and Lehtinen (1982) found that the interaction between a service personnel and a consumer leaves much to the consumer to talk about when evaluation service quality especially as s/he participates in the service process. The same thing applies to a consumer

that identifies with a company. It is very important to emphasise that even though Grönroos and Lehtinen and Lehtinen were the first to conceptualize service quality, their initial contribution were only global definitions of the dimensions (Brady and Cronin, 2001).

In an exploratory study to understand the nature and determinants of consumer services, Parasuraman *et al* (1985b, 1988) initially categorized respondents‟ comments into 10 overlapping determinants or dimensions of service quality. These were explicitly explained by Dr. Crocker et al (2003) as the following:

- *Access:* the ease with which the service can be obtained. It refers to such things as hours of operation, method of contact (online, in person) and waiting time.
- *Communication*: that is keeping customers informed. It involves a number of skills. Among these is listening empathetically. Communication also involves the use of a common language, and the explanation of the service, its advantages and disadvantages.
- *Competence*: involves a high level of skills and knowledge in providing the service.
- *Courtesy*: is the friendliness and politeness of those who provide the service.
- *Credibility*: is the trust that customers put in the organisation and the person who is providing the service.
- *Reliability*: is the performance of the right service at the right time, done the right the very first time.
- *Responsiveness*: constitutes willingness and readiness of employees to provide immediate service.
- *Security*: is a freedom from danger, risk, doubt, and physical safety. Another key element is confidentiality of what the organisation learns about each employee.

- *Tangibles*: Is the proof that the service and the organisation are credible and trustworthy. Customers, employees too, want physical examples (tangibles) to perceive this credibility.
- *Understanding*: refers to the extent to which the organisation understands what the customer‟s expectations are, and her feelings about the services being rendered.

These were later collapsed into 5 distinctive dimensions including: Tangibles, reliability, responsiveness, assurance and empathy.

- *Reliability* dimension entails consumers‟ view about whether the services provided are consistent, dependable and accurate. It is a service company‟s ability to perform the promised service dependably and accurately.
- *Responsiveness* is the willingness of the service personnel to attend to consumers‟ needs and provide punctual services.
- *Assurance*, the service employees displayed knowledge, courtesy and ability to convey trust and confidence.
- *Empathy*, How a service company provides care and individualized attention to its customers, as well as having convenient operating hours.
- *Tangibles*, physical representation of the service Appearance of physical facilities, equipment, employees and communication materials from a service company. (e.g. neat appearance of service personnel).

These five dimensions which define SERVQUAL were originally measured with a 22 pairs of items: Tangibles (4 items); Reliability (5 items); Assurance (4 items); Empathy (5 items). The number of items however is now modified across various industries and situations. As it is, the functional quality which results from the service encounter is labour intensive. Thus scholars have also turned attention to the role of people as a puzzle in the quest for service quality. Bitner et al (1992) mentioned that aspects of employees

that affect perception of service quality include (a) appearance, e.g. dress and demeanour, (b) skills needed to perform the job, e.g. courtesy, (c) commitment.

This early conceptualisation of the dimensions of service quality still guides developments of recent enquiries in the service quality literature (Brady and Cronin 2001). In fact, the findings of Grönroos (1984) is described as a seminal work (Padma et al, 2007) and the service quality dimensions identified by Parasuraman *et al*, (1985b, 1988) still dominate many studies found in the service quality literature (Brady and Cronin 2001) including the current study. Parasuraman *et al*, (1991) claim the SERVQUAL instrument is generic and observed that it advanced service quality studies across many industries. However, the same can also be said of the criticisms it has attracted.

In a review of SERVQUAL, Buttle (1996) identified a total of 11 criticisms, both theoretical (4) and operational (7) in the application of SERVQUAL. Theoretically, the instrument is found to be functional, failing to include the technical outcome of service quality (Babakus and Mangold, 1992; Kang and James, 2004; Kang, 2006). The universality of the five quality dimensions and items within each dimension have also been questioned in many studies across different industries. Carman (1990) who replicated the SERVQUAL instrument in four different service sectors to check its generic claims found that additional dimensions (e.g. courtesy and access) are needed to better explain perceived service quality. Many scholars who use the SERVQUAL instrument in the automobile service industry which is of interest to this thesis also found more or less number of service quality dimensions. For example, the authoritative study of Bouman and Wiele (1992) about the service quality in the Dutch car industry based on the SERVQUAL instrument found only 3 dimensions: the first is customer kindness. This refers to the service personnel‟s friendship, willingness and readiness to provide quick help to customers. This dimension is said to identify with all those found by Parasuraman

et al except tangibles. (b)Tangible, the second dimension remains the same. (c) Faith, the third dimension should result from the customers‟ understanding and insight into the service process. This research work aims to build upon a version of SERVQUAL developed by Bouman and Wiele (1992) to probe into how customers evaluate services in the automobile service sector.

2.3.2. Importance of the Service Quality Dimensions

Many scholars who reported on the relative importance of the service quality dimensions and attributes across different industries underline the superiority of the functional dimension of service quality, popularly referred to as “service encounter” over other dimensions. Service encounters are more about social interactions than economic exchanges between a service supplier and consumer (Czepiel, 1990). Grönroos (1984) for instance mention that even though the technical outcome is important to the satisfaction of service consumer, it is “the way” the consumer gets what s/he receives that is most important. Bitner et al (1990) also demonstrated that customer satisfaction/dissatisfaction during service encounters has much more to do with employee “responses” to failure events than the failure itself. Parasuraman *et al* (1988) provides a more detail understanding of the importance of each functional dimension of service quality. They found that across a broad section of services, Reliability is the most important service quality dimension followed by Assurance, with empathy being the least. A study by Brady and Cronin (2001) also confirm these findings.

Studies in the automobile service industry also confirm the superiority of the functional quality over service outcomes. Bouman and Wiele, (1992) found that customers define service quality based on their perception of the employees performance, i.e. customer kindness dimension. The other two dimensions, Tangibles and faith, only have indirect influences on customers‟ perceived service quality. The authors could not identify

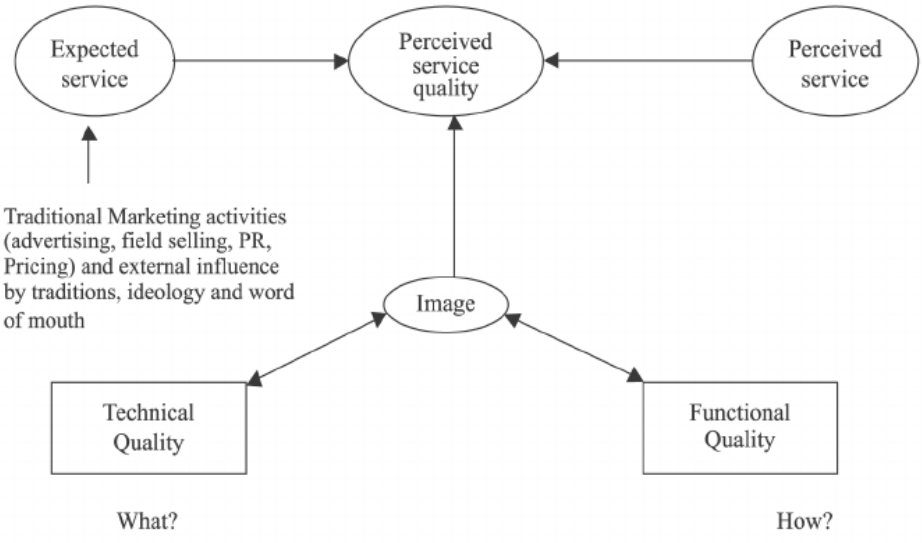
the specific service attributes that are particularly important to customers. However, one central question about the importance of service quality dimensions for customers is whether generalisation is possible. This is because according to Lovelock (1983), services differ in terms of (a) their nature i.e. whether intangible or tangible action is applied and (b) the recipient or the consumer of the service action, i.e. human or possession. These classification variables imply that the importance of service quality dimensions will vary across service types and generalisation is not possible. Chowdhary and Prakash‟s (2007) study in this area supports this view. They found that reliability and tangibles dimensions are respectively the most important dimensions, followed by empathy and responsiveness in a service context where tangible actions are used on possessions (e.g. cars). The reverse is the case for other industries under study. For instance, whiles reliability is ranked second for services on possessions, it actually occupies a fifth position for an information processing company. In the same vein, scholars such as Lin and Liang (2011); Pantouvakis (2010) also provide further supports to the difficulties in generalizing the importance of service quality across different services sectors as did Parasuraman *et al* (1988). In their respective studies, they argue that the tangibles dimension of service quality can become more important to service consumers if it is operationalised to take into account new realities of service landscape. Lin and Liang (2011) for instance found that the physical environment defined in terms ambient and design of the service scope shows more influence on consumer emotions and satisfaction than the emotions displayed by the service personnel. On the basis of previous researches and particularly to those in the automobile service industry, this thesis will attempt to find out which of these service dimensions are most important to the customers under study.

2.3.3. Service Quality Models

Various attempts have been made by researchers to review 19 service models in the light of the changed business scenario and analyze the models for the suitability/need for modification. The models are presented using a standard structure, i.e. covering brief discussion and the major observations on the models. The next section covers the evaluation of these models for above parameters. The brief discussions on the models are as under:

SQ1. Technical and functional quality model (Gronroos, 1984). A firm in order to compete successfully must have an understanding of consumer perception of the quality and the way service quality is influenced.

Managing perceived service quality means that the firm has to match the expected service and perceived service to each other so that consumer satisfaction is achieved. The author identified three components of service quality, namely: technical quality; functional quality; and image.



Source: Grönroos (1984)

Fig 2.1: Service Quality Models

The figure 2.1 above explains some of the service quality models as follows:

(1) Technical quality is the quality of what consumer actually receives as a result of his/her interaction with the service firm and is important to him/her and to his/her evaluation of the quality of service.

(2) Functional quality is how he/she gets the technical outcome. This is important to him and to his/her views of service he/she has received.

(3) Image is very important to service firms and this can be expected to build up mainly by technical and functional quality of service including the other factors (tradition, ideology, word of mouth, pricing and public relations).

2.3.4. Model of Service Quality Gaps

There are seven major gaps in the service quality concept, which are shown in Figure 2. The model is an extension of Parasuraman *et al.* (1985). According to the following explanation (ASI Quality Systems, 1992; Luk & Layton, 2002), the three important gaps, which are more associated with the external customers, are Gap1, Gap5 and Gap6; since they have a direct relationship with customers.

· **Gap1: Customers' expectations versus management perceptions:** as a result of the lack of a marketing research orientation, inadequate upward communication and too many layers of management.

· **Gap2: Management perceptions versus service specifications:** as a result of inadequate commitment to service quality, a perception of unfeasibility, inadequate task standardisation and an absence of goal setting.

· **Gap3: Service specifications versus service delivery:** as a result of role ambiguity and conflict, poor employee-job fit and poor technology-job fit, inappropriate supervisory control systems, lack of perceived control and lack of teamwork.

· **Gap4: Service delivery versus external communication:** as a result of inadequate horizontal communications and propensity to over-promise.

· **Gap5: The discrepancy between customer expectations and their perceptions of the service delivered:** as a result of the influences exerted from the customer side and the shortfalls (gaps) on the part of the service provider. In this case, customer expectations are influenced by the extent of personal needs, word of mouth recommendation and past service experiences.

· **Gap6: The discrepancy between customer expectations and employees' perceptions:** as a result of the differences in the understanding of customer expectations by front-line service providers.

· **Gap7: The discrepancy between employee's perceptions and management perceptions:** as a result of the differences in the understanding of customer expectations between managers and service providers.

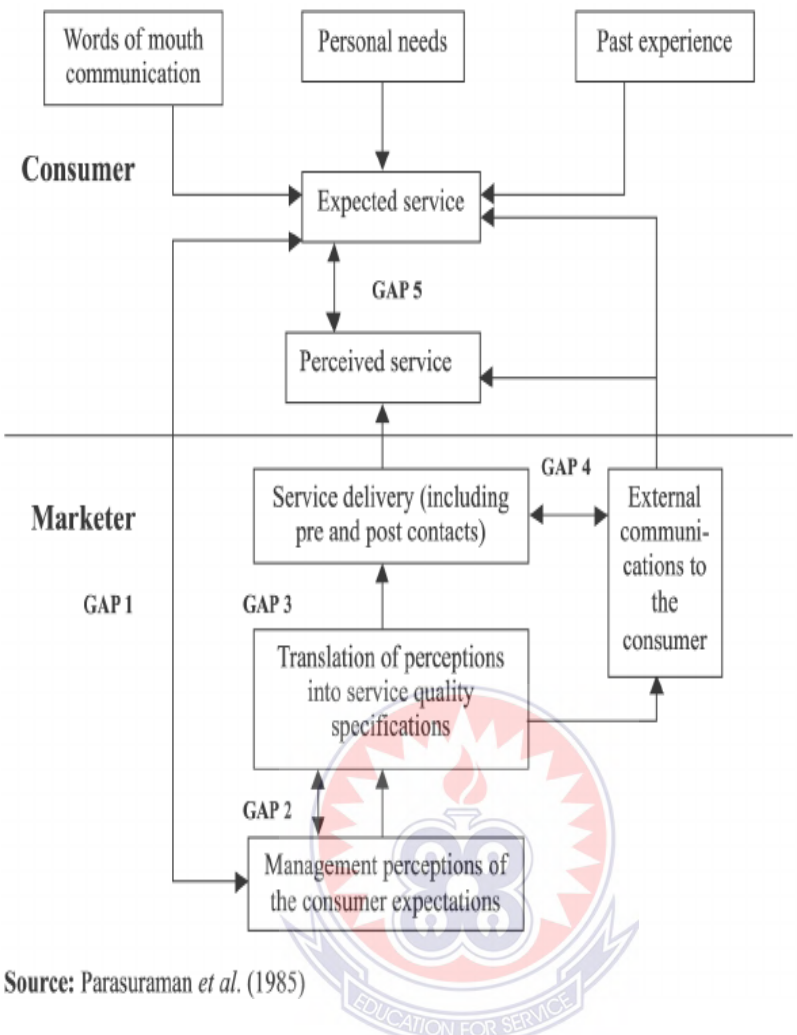


Figure 2.2: Model of Service Quality Gaps

2.4 Customer categories

Because a good deal of skill and tact is required when dealing with customers it is useful to categorize them as follows:

- Informed
- Non-informed
- New
- Regular

2.4.1 Informed customers

Informed customers are those who are knowledgeable about their vehicle and who probably know the whole procedure that the vehicle will follow before it is returned to them. This means that the transaction that takes place between them and the receptionist will largely consist of taking down details of the customer‟s requirements and agreeing a time for the completion of the work and the collection of the vehicle. Depending on the status of the customer, i.e. new or regular, it will be necessary to make arrangements for payment. It may also be necessary to agree details for contacting the customer should some unforeseen problem arise while work on the vehicle is in progress, so that details can be discussed and additional work and anew completion time agreed (Parasuraman *et al,* 1988).

2.4.2. Non-informed customers

The non-informed customer probably does not know much about cars or the working procedures of garages. This type of customer will need to be treated in quite a different way. The non-informed customer will – depending on the nature of the work they require for their vehicle – need to have more time spent on them. A proportion of this extra time will be devoted to explaining what the garage is going to do with their vehicle and also what the customer has to do while the vehicle is in the care of the garage. The latter part will largely consist of making arrangements for getting the customer to some chosen destination and for collecting the vehicle when the work is completed. On handing the car back to the „non-informed‟ customer it will probably be necessary to describe, in a non-patronizing and not too technical way, the work that has been done and what it is that they are being asked to pay for (Parasuraman *et al.,* 1988).

2.4.3. New customers

A „new" customer may be informed or non-informed and this is information that should be „teased" out during the initial discussions with them. Courtesy and tact are key words in dealing with customers and they are factors that should be uppermost in one"s mind at the new customer-introduction stage. The extent of the introductory interview with the new customer will depend on what it is that they want done and the amount of time that they and the firm have to give to the exercise. If it is a garage with several departments it may be advisable to introduce the new customer to relevant personnel in the departments that are most likely to be concerned with them.

Customers may wish to know that their vehicle will be handled by qualified staff and it is common practice for firms to display samples of staff qualification certificates in the reception area. At some stage it will be necessary to broach the subject of payment for services and this may be aided by the firm having a clearly stated policy. Again, it is not uncommon for a notice to be displayed which states the „terms of business"; drawing a client"s attention to this is relatively easy (Parasuraman *et al.,*1988).

2.4.4 Regular customers

Regular customers are valuable to a business and they should always be treated with respect. It hardly needs saying that many of the steps that are needed for the new customer introduction will not be needed when dealing with a regular customer. However, customers will only remain loyal (regular) if they are properly looked after. It is vitally important to listen carefully to their requests and to ensure that the work is done properly, and on time and that the vehicle is returned to them in a clean condition (Parasuraman *et al.,* 1988).

2.5 Service Attributes that Determine the Choice of Maintenance Service

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. Brito and Aguilar (2007) interviewed 400 car owners that had over 1.0 capacity engine in their cars and the warranty of the car had ended. Based on earlier researches and their own studies, they came up with 30 service attributes. (Brito & Aquilar, 2007).

1. Ability to absorb non-estimated costs generated by internal problems or failures
2. Ability to anticipate problems
3. Accuracy and correctness of invoice and receipt
4. Adequate opening hours
5. Attendants‟ cooperation and quick response
6. Attendant‟s trustworthiness
7. Attention to modifications demanded by the customer
8. Attention to service details
9. Employee‟s discretion
10. Employees‟ willingness to get to know customers
11. Employee‟s appearance
12. Employees‟ courtesy and politeness
13. Employees‟ knowledge and experience
14. General equipment condition
15. General site condition
16. Getting it right the first time
17. Giving the customer individual and personal attention

18. Image of reliable
19. Keeping promises
20. Keeping to agreed schedule
21. Keeping to original forecasted price
22. Mechanics trustworthiness
23. Organization‟s climate and environment
24. Prompt price change communication
25. Value for money service
26. Willingness to adopt to customer schedule
27. Willingness to adopt specific solutions
28. Willingness to explain service development
29. Willingness to negotiate
30. Willingness to solve the customer‟s problem

Car maintenance service attributes (Brito &Aquilar, 2007).

Table 1.2 shows the most important service attributes of consumers in independent garages as well as on branded dealers. The importance of different attributes varies a lot between the two alternatives.

Table 2.1: Important Service Attributes with Roadside Garages and Standard Garages.

Customers of roadside repair garages	**Customers of standard garages**
Keeping to original forecasted price	Getting it right first time
Value for money service	Value for money service
Getting it right first time	Mechanics' trustworthiness
Mechanics' trustworthiness	Keeping to original forecasted price
Keeping promises	Employees' knowledge and experience

Willingness to solve customers' problems	Keeping to agreed schedule
Keeping to agreed schedule	Keeping promises
Employees' knowledge and experience	Attention to modification s demanded by the customer
Attention to modifications demanded by the customer	Willingness to solve customers' problems
General equipment condition	General equipment condition

(Brito &Aquilar, 2007).

2.6 Service Quality in the Automobile Industry

A service, whether as a core product or a customer service presents an opportunity to create value for the customer (Trasorras *et al*, 2009; Grönroos & Ravald, 1996). As such it has to be of quality, especially if the former is established (Parasuraman *et al*, 1985b). Since the 1980s there has been an increase in the enquiry into service quality (Lehtinen & Lehtinen, 1991). This interest is fuelled by companies realising that service quality is a more effective source of competitive advantage (Zeithaml, 2005). This lead to more studies on its conceptual framework, techniques for measurement, managerial implications and its effect on consumer behavior (Pe´rez et al, 2007; Padma et al, 2007). This thesis seeks to explore the service quality-loyalty relationship in the automobile industry.

2.6.1 Workshop Activities

Reception will have recorded the details of the work that is to be done on the vehicle, and they will have agreed details of completion time, etc., with the workshop. At some point in the process a „job card" will have been generated. The instructions about the work to be done must be clear and unambiguous. In some cases this may be quite brief, for example, 10 000 mile service. The details of the work to be performed will be contained in the service manual for the particular vehicle model. In other cases it maybe rather general,

for example, „Attend to noisy wheel bearing, „near side front". Describing exactly what work is required may entail further investigation by the technician. It may be that the noise is caused by the final drive. The whole thing thus becomes much more complicated and it may be necessary to conduct a preliminary examination and test of the vehicle before the final arrangements are made for carrying out the work. Once the vehicle has been handed over to the workshop with a clear set of instructions about the work to be done, it becomes the responsibility of the technician entrusted with the job and their colleagues to get the work done efficiently and safely and to make sure that the vehicle is not damaged. This means that the workshop must have all necessary interior and exterior protection for the vehicle such as wing and seat covers, etc (Parasuraman *et al.,* 1988).

3.6.1.1 Records

As the work proceeds a record must be made of materials used and time spent because this will be needed when making out the invoice. In large organizations the workshop records will be linked to stock control in the parts department and to other departments, such as accounts, through the company"s information system which will probably be computer based (Parasuraman *et al,*1988).

3.6.1.2 Quality Control

Vehicle technicians are expected to produce work of high quality and various systems of checking work are deployed. One aspect of checking quality that usually excites attention is the „road test". It is evident that this can only be performed by licensed drivers and it is usually restricted to experienced technicians. A road test is an important part of many jobs because it is probably the only way to ensure that the vehicle is functioning correctly. It is vitally important that it is conducted in a responsible way (Parasuraman *et al,* 1988).

3.6.1.3. After Sales Services

After sales services is an important department in a car dealer company as two thirds from car shops profits comes from after sales services. After sales services include all the services that take place after the car has been purchased. After sales services are repair activities that include maintenance service and other repairing; damage repair including paint works, rust prevention, spare part functions, courtesy and rental cars as well as all other possible after sales services. (Autoalantiedotuskeskus, 2011c.)45 % of people that work for retail trade and repair of motor vehicles work as mechanics. There are many different types of mechanics: car mechanic, car painter, car electrician, express mechanic, a body repair mechanic, a diesel mechanic and heavy trucks mechanic.

In addition to mechanics in after sales, there works spare parts salespersons, warehouse keepers, service foremen, service advisors and warranty handlers. The title of managers in after sales services area after sales manager, a service manager, a body shop manager and a spare parts manager. Pensioning of the large age groups threats especially the after sales services as there are not that many young people interested in car after sales services. Autoalantiedotuskeskus, 2011c. observed that old car fleet that Finland has offers multiple challenges to the car service companies.

Technology that new cars have insists good computing skills from the mechanics and, on the other hand, the old cars need a lot of know how. The middle-age of passenger car fleet in Finland is 11.9 years which is one of the highest in Europe. 60 % of 2-6 year old cars are taken to dealership shops for maintenance but only 37 % of 7-10 year old cars and further from that only18 %. The growing imports of used cars have increased the customer flow in “no-name “repair shops and services. The competition in service business has increased and it is expected that there will be a few Foreign Service shops or

chains also in Finland. The increase of competition improves customer service as well as the quality of conducted maintenance services (Autoalantiedotuskeskus, 2011c).

2.7 Challenges Affecting Service Quality of Roadside Auto Repairs Garages in Ghana

Rajeshkumar and Rajendra (2011) in their topic "Six Sigma implementation in medium scale automotive enterprises" – revealed that, the automobile industry is undergoing a major restructuring. They asserted that, sustenance and survival remains an issue of concern for these roadside automobile garages, as they will have to absorb global best practices in this competitive environment. According to these writers cost competitiveness, customer orientation, lead-time, are some key factors, constraint or the challenges that the local auto garages will have to imbibe to survive in the new global set-up". It is significant enough to note that Rajeshkumar and Rajendra (2011) identify a similar challenge or constraint in the small scale garages of the automobile service industry that goes to complement Osei *et al.* (1993), Daniels and Ngwira (1993), Aryeetey *et al.* (1994), Parker *et al.* (1995) and others outlined as the challenge or constraint facing roadside garages in general.

Rajeshkumar and Rajendra (2011) indicated in their report that these automobile companies face the limitations of being small scale garages, like low capital base, limited generation of surplus funds for re-investment due to tight working capital cycle, lack of awareness of business opportunities, inadequate exposure to international environment, limited geographical diversity of markets, obsolete technology, poor infrastructure facilities, etc.

2.7.1 Knowledge and Experience of Mechanics in Roadside Auto Garages

A survey conducted by Akpakpavi (2014) revealed that a large number of mechanics in the roadside auto garages in Ghana have considerable years of auto repair

working experience, but lack the ability to inspect and repair modern automobile vehicles due to low educational and technical levels. The auto mechanics also lack the ability to identify and use modern diagnostic equipment, manufacturers‟ manuals, computers and internet which have characterized modern vehicle repairs, in their repair practices. They also lack adequate tools, equipment and other logistical supports.

The results of study conducted by Tettehfio, Turkson, Borlu, Atombo, (2015); indicated that a majority of about 62.4% roadside garage mechanics do not have an idea about the behaviour of the check engine light. Similarly, a majority of about 89.6% of the mechanics in the roadside garages had no idea regarding how to go about diagnosing faults on vehicles equipped with electronically managed systems. Reference manuals are a vital resource as far as the diagnosis of electronically managed vehicle systems is concerned and should be handy in every garage at all times.

Apart from containing general information regarding routine maintenance of a vehicle, reference manuals also contain information regarding the various system diagnostic trouble codes and their interpretation. These manuals may also contain information in the form of diagnostic flow charts that could be very useful in the diagnostic process However, most mechanics (about 97.7%) in the roadside garages had no reference manuals in their various garages and therefore affect the quality of diagnosis and subsequent repair work that is done by the mechanics and technicians **(**Tettehfio *et al.* 2015*).*

2.7.2 Facilities, Tools and Equipment Challenges for Roadside Garages

According to Akpakpavi (2014) more than 80% of the small and medium scale garages in the Ghana do not have adequate tools and materials to work with. The study revealed that apart from not having most of the required basic tools and equipment, the

garages also do not have modern vehicle diagnostic equipment such as: oscilloscope, scan tool, diagnostic code readers, portable data link, computer diagnostic testers, exhaust gas analyzers, computers, internet connectivity, etc. He further revealed that, most of the mechanics lack basic working knowledge and application of these diagnostic equipment and therefore finds it extremely difficult to inspect, repair and maintain current trend of automobile vehicles leading to gradual job losses.

A study conducted by Baidoo, Odum-Awuakye and Oduro-Okyireh (2015) also shows that a number of cars in the Ghana receive after sales services at the way-side automobile repair garages as an alternative to standard dealership service centres. According to Baidoo *et al* (2015) these service garages are mostly handicapped in terms of modern facilities among others in their quest to providing quality services to their prospective customers.

Digital multimeters, automotive stethoscopes, oscilloscope, logic probes and manufacturer‟s reference manuals are essential resources for carrying out effective diagnosis, proper maintenance and repair of electronically managed vehicle systems (Tettehfio *et al.* 2015). The study conducted by Tettehfio *et al* (2015) shows that almost all roadside garages lack the basic electronic diagnosis equipment to find faults on electronic vehicles and repair them.

Wanyeki (2014) also revealed that majority of the roadside garages are located in temporary workshops. This could be attributed to the ownership of the plots within town in that most roadside garages rent the places they are using and therefore cannot make permanent improvements on the plots.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

An appropriate methodology is required to gather the necessary data to meet the objectives of the research. This research is mainly qualitative data study. However, instruments that are qualitative and quantitative in nature will be used. In this chapter an attempt is made to look at the profile of the study, research design, target population, data sources, sampling procedures (size and technique), data collection instruments, validity and reliability instrument, fieldwork/ data collection organization of the project and data analysis.

3.1 Profile of the Study Area

Cape Coast Metropolis lies within latitudes $5^0.07$‟ to $5^0.20$‟ north of the Equator and between longitudes $1^{\circ}.11$‟ to $1^{\circ}.41$‟ west of the Greenwich Meridian. Cape Coast Metropolis is bounded on the East by Abura – Asebu – Kwamankese District, West by Komenda – Edina – Eguafo – Abrem (K. E. E. A.) District and South by the Gulf of Guinea and North by Twifo Heman Lower Denkyria District. The Capital of the Municipality is Cape Coast. Other major communities include Efutu, Koforidua, Abura, Pedu and Nyinasin. Cape Coast Metropolis covers a total land area of approximately 122 sq. km. (12,200 ha.). The total population is 118,106 out of which 57,365 are males and 60,741 females. Farmers and fishermen as well as those into agricultural-related activities form about 60% of the population (Statistical Services, 2000 population census). Active agricultural population is approximately 28,000. Commercial farmers are approximately 0.3% and peasants (majority) approximately 99.7%.

3.2 Research Design

The research design includes an outline of what is being written on including their operational implications to the final analysis of the data. This study adopted the case study strategy. Among the various research designs, case studies are frequently regarded as using both quantitative and qualitative research and a combination of both approaches (Bryman, 2004). Both primary and secondary data sources, which are considered to be more appropriate for this study was used. These types of research design are used because it eventually enables you to make judgment about the effectiveness, relevance or desirability of the research. Research methods can be placed into two basic categories: quantitative and qualitative. Qualitative research gathers information that is not in numerical form. Both qualitative and quantitative research approach were used for the study because qualitative research is descriptive in nature and quantitative research gathers information that is numerical (Bryman, 2004).

3.3 Population

The targeted population for the study was three hundred (300). The population of the study was made up of costumers of auto garages (commercial drivers, private drivers, and transport managers), workshop managers, and master mechanics of both the standard and road side garages in the Cape Coast Metropolis.

3.4 Sampling Procedure and Sample Sizes

The total sample size selected for the research was base on the total population size of members considered and precision value of ±8%. According to Yamene (1967), the minimum sample size required for a research work is determined using the formula;

$$n = \frac{N}{1+N\,(e)^2}$$

About three hundred (300) drivers and automobile auto mechanics were counted in the Cape Coast metropolis. Hence the minimum sample size used for this study based on Yamene‟s recommendation was;

$$n = \frac{300}{1+300\ (0.08)^2}$$

$$n = 102$$

Based on the above calculation, a population of three hundred (300) requires a sample size of at least one hundred and two (102). In view of this, a sample size of one hundred and five respondents (105), was chosen for the study. Thus seventy five (75) customers and thirty (30) mechanics from standard and road side garages were sampled using random sampling methods.

Random sampling technique was used to select participant for the study. This method of sampling therefore ensures that all participants have an equal opportunity of being selected for the study. Purposive sampling method was used to sample mechanics of both standard and road side garages for one on one interview to identify challenges of the roadside garages. From a review of literature, a survey questionnaire will be developed to collect data for the study. Data was collected through the use of a written questionnaire hand-delivered to participants.

Questionnaires were filled out by participants and return to the researcher. Out of one hundred and five (105) questionnaires that were distributed, ninety seven (97) were returned and were used for the analysis. The number of questionnaires that were not returned was insignificant and therefore did not have any effect on the total outcome of the research.

3.5 Data Collection Instrument

The main instrument that was used to collect information for the study was questionnaire. The questionnaire was structured to consist of closed ended type of questions in order to elicit feedback from respondents. Thus, two different questionnaires were used to collect data. One was used to collect data from workshop managers of standard auto garages and master mechanics of road side auto garages or fitting shops in the Cape Coast Metropolis.

Questionnaire for the managers and masters of the auto garages, was divided into three (3) sections namely, socio-demographic characteristics, characteristics of their service garages and service delivery of the garage.

Another questionnaire was also used to collect data from drivers, vehicle owners and transport managers of cooperate institutions in the Cape Coast Metropolis. This questionnaire also focused on service quality, cost effective and customer satisfaction. It consists of four (4) sections. Section 1 contains the demographic information of the respondents, including the respondent‟s gender, age, and educational qualification and working experience. Section 2 assessed the service quality of dealership/standard and Roadside Garages in vehicle maintenance. Section 3 cost effectiveness and section 4 customer satisfaction.

These are the main areas around which data gathered from clients were analyzed. Questionnaires were designed to collect information regarding maintenance practices. Maintenance procedures and processes were covered in the questionnaire and interview guide.

3.6 Reliability Testing

Reliability testing was conducted on multiple-items under each construct to ensure each of the items correlated and could be aggregated to form an overall score for that construct (Bryman & Bell, 2003). Cronbach"s alpha method was used for the test.

3.6.1 Questionnaire Pretesting

The questionnaire was pretested to find out its effectiveness. It was pre-tested for construction, content validity, wording, and consistency, and those that were found to be improper or misleading were either modified or completely removed.

A pilot study to assess the authenticity of the research instruments was conducted. The pilot questionnaires were given to 20 people (5 respondents from standard garages, 7 from road side garages and 8 car owners and drivers) to answer to correct errors like repetition of questions and typographical mistakes and the avoidance of double questions. The pilot testing took place at Cape Coast Metropolis. The results from the pilot testing became clear evidence that the questionnaire and interview guide were accurate and grammatically good for distribution

3.7 Administration of the Questionnaire

Application to conduct the research was delivered to authorities concerned. The purpose of the study was clearly stated in the application letter. The questionnaires were administered personally on the respondents.

3.8 Data Analysis

The raw data obtained from a study is useless unless it is transformed into information for the purpose of decision making (Emery & Couper, 2003). The data analysis involved reducing the raw data into a manageable size, developing summaries

and applying statistical inferences. Consequently, the following steps were taken to analyze the data for the study. The data was edited to detect and correct, possible errors and omissions that were likely to occur, to ensure consistency across respondents. The data was then coded to enable the respondents to be grouped into limited number of categories. The coding will be necessary for efficient analysis of data. For this research work, coding decisions were taken at the designing stage of the questionnaire. All of the items under each of the 6 constructs were measured by using a five-point Likert-type response scales, assigning numerals to question responses with 5 coded for strongly agree, 4 for agree, 3 for neutral, 2 for disagree and 1 for strongly disagree. Responses for demographical questions were also coded. Question 1 requested for respondents‟ gender information, numerals were assigned, 1 for male and 2 for female. Question 2 requested for information on educational level. Numerals were assigned, 1 for Basic, 2 for Secondary and 3 for tertiary education. Question 3 is aimed at knowing the type of customer responding. Numerals were assigned, 1 for Individual Vehicle owner, 2 for Fleet Manager, 3 for driver and 4 for other. A space will be used for customers to write details if “others” is selected.

The SPSS version 18, MS Word and MS Excel were used to analyse the data. Data was presented in tabular form, graphical and narrative forms. In analyzing the data, descriptive statistical tools such as bar graph and pie charts were used.

CHAPTER FOUR

RESULTS AND FINDINGS

4.0 Introduction

This chapter analyses and interprets the data gathered through a questionnaire survey. In all, ninety-seven questionnaires were received from the two groups of respondents (70 drivers and 27 mechanics) in the Cape Coast Metropolis. The questionnaire data were analysed using simple percentages. The survey results presented in this chapter are, therefore, based on the data gathered from the ninety-seven questionnaires. The analysis of the data would be done in relation to the demographics of the respondents and the various research questions.

4.1 Demographic Information

The first section analyses and discusses the characteristics of respondents. The demographic data discussed included gender, age, level of education, customer type of private and commercial drivers and job title of mechanics.

Table 4.1: Gender of Respondents

Gender	Private & Commercial Drivers	Managers & Master Mechanics.
	Percentage (%)	Percentage (%)
Male	91.4	100
Female	8.6	0.0
Total	**100**	**100**

Source: Field Data (2016)

Table 2 indicates that, 91.4 percent of the private and commercial car drivers are male with a hundred percent male dominance of managers and master mechanics. This is an indication that, males dominant private and commercial drivers, with no female mangers of garages in the Cape Coast Metropolis.

Table 4.2: Age of Respondents

Age (years)	Private & Commercial Drivers	Managers & Master Mechanics.
	Percentage (%)	Percentage (%)
21 & below	7.1	0.0
21-30	17.1	18.5
31-40	37.1	25.9
41-50	22.9	44.4
51-60	14.3	7.4
61 & above	1.4	3.7
Total	**100**	**100**

Source: Field Data (2016)

Table 3 shows that, the age distribution of both private and commercial car drivers as well as the managers and masters in the Cape Coast Metropolis is skewed downwards (that is the younger ones significantly outnumber older ones). It can be concluded that majority of the respondents are 50 years and younger. This is a confirmation of energetic men and women who use the road or act as managers or master mechanics. Respondents were also asked about their highest educational level attained. Their responses are captured on Table 4.

Table 4.3: Educational Level of Respondents

Qualification	Private & Commercial Drivers	Managers& Master Mech.
	Percentage (%)	Percentage (%)
No formal education	8.6	3.7
Basic	27.1	74.1
Secondary/technical	14.3	18.5
Tertiary	50	3.7
Total	**100**	**100**

Source: Field Data (2016)

From Table 4, it is important to note that 91.4 percent of private and commercial car drivers have obtained some level of education at least at the basic level. Again 50 percent have a tertiary education. this is pertinent because, the information that will provided for in this research will be well informed since 91 percent have some form of formal education. Table 4 further confirms Akpakpavi (2014) research that a large number of mechanics in the roadside auto garages in Ghana have considerable years of auto repair working experience, but lack the ability to inspect and repair modern automobile vehicles due to low educational and technical levels since 77 percent have only basic education or no formal education at all.

The last demographic data sought the customer type and the job title of mechanics. Results from their responses are presented on Table 5 and 6 respectively.

Table 4.4: Customer type (Private and Commercial Drivers)

Type	Frequency	Percentage (%)
Private car driver	41	58.6
Commercial car driver	25	35.7
Fleet manager	4	5.7
Total	**70**	**100**

Source: Field Data (2016)

In response to the customer type 58.6 percent of the respondents are private care drivers and only 5.7 percent are fleet drivers. The commercial drivers constituted a minority of 35.7 percent.

Table 4.5: Job title of Mechanics

Type	Frequency	Percentage (%)
Master mechanic	23	85.2
Technician	2	7.4
Workshop manager	2	7.4
Total	**27**	**100**

Source: Field Data (2016).

Table 6 indicates that majority 85.2 percent of the respondents are master mechanic 7.4 percent each for technician and workshop managers. The implication is that a lot of experience in relation to first-hand information on the job will be brought to light as 85 percent of the responses will come from the master mechanics on the field.

4.2 Research Questions 1

4.2.1 What is the service quality of Local/Roadside Garages compared to standard garages in vehicle maintenance?

According to Zeithaml, (2005), service quality interest is fueled by companies realising that service quality is a more effective source of competitive advantage. A service, whether as a core product or a customer service presents an opportunity to create value for the customer. Based on the ten overlapping determinants or dimensions of service quality (SERVQUAL) developed by Crocker et al (2003), the respondents were asked the quality of roadside garages compared to the standard garages.

Their responses are illustrated in Table 4.6. The keys are Strongly Disagree - SD, Disagree - D, Uncertain – U, Agree – A and Strong Agree - SA,

Table 4.6: Service Quality of Roadside Garages

Service Quality	SD %	D %	U %	A %	SA (%
Empathy and responsiveness					
They are friendlier	15.7	15.7	**20**	27.1	21.4
Listen patiently to complaints	11.5	24.3	**14.3**	30.0	20
Understand complaints from clients	24.3	21.4	**11.5**	30.0	12.9
Explain details of faults	24.3	18.6	**14.3**	30.0	12.9
Wash car clean after servicing	32.9	25.7	**10.0**	10.0	7.1

Assurance and reliability					
Ability to interpret vehicle problems	12.9	20.0	**17.1**	35.7	14.3
Pay attention to service details	8.6	35.7	**15.7**	27.1	12.9
Efficient in repair services	24.3	32.9	**15.7**	12.9	14.3
Have knowledge and job experience	8.6	20.0	**12.9**	41.4	17.1
Get the job done the first time	8.6	32.9	**15.7**	34.3	8.6
Provide check list on vehicle	47.1	35.7	**12.9**	10.0	8.6

Source: Field Data (2016).

From Table 7, it is clear that road side garages exhibit empathy and responsive service quality compared to the standard garages. With an average of 11.5 to 20 percent uncertainty, majority of the respondents ranging between 42 to 50 percent indicating agree and strongly agree to the empathy and responsiveness of the road side garages. Grönroos (1984) for instance mention that even though the technical outcome is important to the satisfaction of service consumer, it is "the way" the consumer gets what she/he receives that is most important. This is a confirmation from Table 7, as 42 to 58 percent of the respondent agree or strongly agree that roadside garages have the ability to interpret vehicle problems, have adequate knowledge and experience on the job and finally get the job done at the first time. It is however significant to note that 68 to 72 percent of the respondent disagree or strongly disagree that roadside garages provide checklist on vehicles and wash the car after servicing with 10 to 13 percent uncertainty.

4.3 Research Questions 2

4.3.1 What are the best maintenance practices that will improve service quality of the Local/Roadside Garages in vehicle maintenance?

The objectives of maintenance can therefore be summarized as the systematic and scientific upkeep of equipment for prolonging its life, assuring instant operational readiness and optimal availability for production at all times whilst making sure that the safety of man and machine is never jeopardized at reasonable cost (Santiago, 2010). To Mobley (2008) the major objective for the implementation of total productive maintenance is to continuously improve the availability and prevent the degradation of the vehicle/ equipment and hence achieve maximum effectiveness. This guided the researcher to inquire from the roadside garages some of the best maintenance practices they engaged in. Their responses are illustrated in Table 8.

Table 4.7: Best Maintenance Practice

Best maintenance practices	SD %	D %	U . %	A %	SA %
Are willing to negotiate price	1.4	20.0	4.1	42.9	31.4
Tools can easily be located	2.9	18.6	8.6	27.1	42.9
Have neat and clean environment	37.1	37.1	8.6	12.9	4.1
They look more presentable	27.1	37.1	14.3	12.9	8.6
They have good reception	42.9	34.3	8.6	12.9	1.4
They have wash rooms	51.4	30.0	8.6	2.9	7.1
They have good record keepings	52.9	25.7	12.9	5.7	2.9
They pay attention to safety rules	32.9	32.9	22.9	4.1	7.1

Source: Field Data (2016).

Table 8 gives clear indication that roadside garages provide some best maintenance practices like negotiation of prices and their shops or tools are easy to be located with 69 to 74 percent agree or strongly agree. It is important to note that the uncertainty has a percentage of 4 to 9 percent. significantly, most of the respondents also disagree or strongly disagree that roadside garages practice very good maintenance practice as 64 to 80 percent indicated that they do not look presentable, do not have good reception, washrooms and neither do they keep records or pay attention to safety rules. This is an indication of poor maintenance practices among roadside garages.

4.4 Research Questions 3

4.4.1 What are the possible challenges affecting service quality of the Local/ Roadside Garages in vehicle maintenance?

According to Baidoo *et al* (2015) these service garages (roadside garages) are mostly handicapped in terms of modern facilities among others in their quest to providing quality services to their prospective customers. It is against this backdrop that this research question sought to elicit from respondents whether roadside garages have modern hand tools as well as other sophisticated equipment for handling customer needs and services. Their response to this availability is illustrated in Table 4.8.

Table 4.8: Challenges of Road side Motor Garages with regards to availability of tools and equipment and facilities.

Tools and Equipment	Yes %	No %
Basic hand tools (spanners, pliers, screw drivers, hammers etc.)	88.9	11.1
Diagnostic tools		
Electronic diagnose device (OBD Scan tool)	14.8	85.2
Multi meter	11.1	88.9
Stroboscopic device	7.4	92.6
Personal computer	7.4	92.6
Power tools		
Tyre remover machine	7.4	92.6
Engine lift	14.8	85.2
Vehicle lift	7.4	92.6
Battery charger	11.1	88.9
Air compressor	7.4	92.6
Discs late machine	3.7	96.3
Drilling machine	3.7	96.3
Grinding machine	7.4	92.6
Test rig	0.0	100
Facilities		
Office	7.4	92.6
Dressing room	37.0	63.0
Wash room	14.8	85.2
Service pit	11.1	88.9
Adequate space for parking vehicles.	44.4	55.6
Adequate shelter for repair work	11.1	88.9
Spare parts shop	25.9	74.1

Source: Field Data (2016).

Table 4.8 illustrates a dominant (88.9 percent) availability of basic hand tools like spanners, pliers, screw drivers, hammers, etc., however, it is significant to note that the outcome of the data on Table 4.8 confirms the assertion by Baidoo *et al* (2015) since 85 to 96 percent of the respondents did not have modern equipment like diagnostic tools (electronic diagnose device, multi meter, stroboscopic device etc), power tools **(**tyre

remover machine, engine lift, vehicle lift, air compressor, etc,) and work shop facilities. It is further clear from Table 7 that none of the roadside garages in the cape coast metropolis had a test rig, a further confirmation to the study conducted by Tettehfio *et al* (2015) that shows that, almost all roadside garages lack the basic electronic diagnosis equipment to find faults on electronic vehicles and repair them. The implication is that roadside garages in the absence of these modern sophisticated tools may resort to try and error.

Table 4.9: General Challenges facing the roadside garages in Ghana.

General Challenges facing the garages	SD %	D %	U %	A %	SA (%	Total %
Difficulty in securing funding for operations	-	-	14.8	63	22.2	100
Inadequate facilities to organise in-service training to upgrade the skills of staff	7.4	11.1	-	66.7	14.8	100
Lack of support from government	-	-	11.1	70.4	18.5	100
High interest on bank and financial institution loans	-	-	7.4	85.2	7.4	100
High cost of tools and equipment	-	-	3.7	81.5	14.8	100
Difficulty in acquiring land for the establishment of garages	11.1	7.4	-	63	18.5	100

Source: Field Data (2016).

The study shows that 85.2% of the respondents agreed that difficulty in securing funding for operations is a challenge they face while 14.8% were uncertain. The study results conclude that difficulty in securing funding for operations is a challenge faced by the garages. The study results depicts that 81.5% of the respondents agreed that inadequate facilities to organise in-service training to upgrade the skills of staff is a challenge while 18.5% of the respondents disagreed. The study concluded that inadequate facilities to

organise in-service training to upgrade the skills of staff is a challenge faced by the garages. The study results holds it that 88.9% of the respondents agreed that lack of support from government is a challenge while 11.1% of the respondents were uncertain. The study indicates that 92.6% of the respondents agreed that high interest on bank and financial institution loans is a challenge while 7.4% of the respondents were uncertain. The study shows that majority 96.3% of the respondents agreed that high cost of tools and equipment is a challenge facing the garages while 3.7% of the respondents were uncertain. The study shows that 81.5% of the respondents agreed that difficulty in acquiring land for the establishment of garages is a challenge facing the garages while 18.5% of the respondents disagreed. Rajeshkumar and Rajendra (2011) indicated in their report that these automobile companies face the limitations of being , like low capital base, limited generation of surplus funds for re-investment due to tight working capital cycle, lack of awareness of business opportunities, inadequate exposure to international environment, limited geographical diversity of markets, obsolete technology, poor infrastructure facilities, etc.

Wanyeki (2014) also revealed that majority of the roadside garages are located in temporary workshops. This could be attributed to the ownership of the plots within town in that most roadside garages rent the places they are using and therefore cannot make permanent improvements on the plots.

CHAPTER FIVE

DISCUSSION OF RESULTS

The results of the analysis are discussed below:

5.1 The service quality of Local/Roadside Garages compared to standard Garages in vehicle maintenance.

The study indicates that it is important to note that 91.4 percent of private and commercial car drivers have obtained some level of education at least at the basic level. Again 5 percent have a tertiary education. This is pertinent because, the information that will be provided for in this research will be well informed since 91 percent have some form of formal education. The study findings further confirms Akpakpavi (2014) research that a large number of mechanics in the roadside auto garages in Ghana have considerable years of auto repair working experience, but lack the ability to inspect and repair modern automobile vehicles due to low educational and technical levels since 77 percent have only basic education or no formal education at all.

According to Zeithaml (2005), service quality interest is fueled by companies realising that service quality is a more effective source of competitive advantage. A service, whether as a core product or a customer service presents an opportunity to create value for the customer. Based on the ten overlapping determinants or dimensions of service quality (SERVQUAL) developed by Crocker et al (2003), the respondents were asked the quality of roadside garages compared to the standard garages.

The study findings depicts that, it is clear that road side garages exhibit empathy and responsive service quality compared to the standard garages. With an average of 11.5 to 20 percent uncertainty, majority of the respondents ranging between 42 to 50 percent

indicating agree and strongly agree to the empathy and responsiveness of the road side garages. Grönroos (1984) for instance mention that even though the technical outcome is important to the satisfaction of service consumer, it is "the way" the consumer gets what she/he receives that is most important. This is a confirmation from Table 7 as 42 to 58 percent of the respondent agree or strongly agree that roadside garages have the ability to interpret vehicle problems, have adequate knowledge and experience on the job and finally get the job done at the first time. It is however significant to note that 68 to 72 percent of the respondent disagree or strongly disagree that roadside garages provide checklist on vehicles and wash the car after servicing with 10 to 13 percent uncertainty.

According to Vroeijenstijn (1985), the concept of quality is not new: it has always been part of the academic tradition. It is the outside world that now emphasis the need for attention to quality. It is the relationship between higher education and society which has changed. Quality is perceived differently by different people. Yet, everyone understands what is meant by "quality." In a manufactured product, the customer as a user recognizes the quality of fit, finish, appearance, function, and performance. The quality of service may be rated based on the degree of satisfaction by the customer receiving the service. The relevant dictionary meaning of quality is the degree of excellence. However, this definition is relative in nature. The ultimate test in this evaluation process lies with the consumer. The customer‟s needs must be translated into measurable characteristics in a product or service. Once the specifications are developed, ways to measure and monitor the characteristics need to be found. This provides the basis for continuous improvement in the product or service. The ultimate aim is to ensure that the customer will be satisfied to pay for the product or service. This should result in a reasonable profit for the producer or the service provider. The relationship with a customer is a lasting one. The reliability of a product plays an important role in developing this relationship.

5.2 The best maintenance practices that will improve service quality of the Local/Roadside Garages in vehicle maintenance

The objectives of maintenance can therefore be summarized as the systematic and scientific upkeep of equipment for prolonging its life, assuring instant operational readiness and optimal availability for production at all times whilst making sure that the safety of man and machine is never jeopardized at reasonable cost (Santiago, 2010). To Mobley (2008) the major objective for the implementation of total productive maintenance is to continuously improve the availability and prevent the degradation of the vehicle/ equipment and hence achieve maximum effectiveness.

The study gave clear indication that roadside garages provide some best maintenance practices like negotiation of prices and their shops are easy to be located with 69 to 74 percent agree or strongly agree. It is important to note that the uncertainty has a percentage of 4 to 9 percent. Significantly, most of the respondents also disagree or strongly disagree that roadside garages practice very good maintenance practice as 64 to 80 percent indicated that they do not look presentable, do not have good reception, washrooms and neither do they keep records or pay attention to safety rules. This is an indication of poor maintenance practices among roadside garages.

Reception will have recorded the details of the work that is to be done on the vehicle, and they will have agreed details of completion time, etc., with the workshop. At some point in the process a „job card" will have been generated. The instructions about the work to be done must be clear and unambiguous. In some cases this may be quite brief, for example, 10 000 mile service. The details of the work to be performed will be contained in the service manual for the particular vehicle model. In other cases it maybe rather general, for example, „Attend to noisy wheel bearing, „near side front". Describing exactly what work is required may entail further investigation by the technician. It may be that the noise

is caused by the final drive. The whole thing thus becomes much more complicated and it may be necessary to conduct a preliminary examination and test of the vehicle before the final arrangements are made for carrying out the work. Once the vehicle has been handed over to the workshop with a clear set of instructions about the work to be done, it becomes the responsibility of the technician entrusted with the job and their colleagues to get the work done efficiently and safely to make sure that the vehicle is not damaged. This means that the workshop must have all necessary interior and exterior protection for the vehicle such as wing and seat covers, etc. (Parasuraman *et al* (1988).

5.3 The possible challenges affecting service quality of the Local/ Roadside Garages in vehicle maintenance

According to Baidoo *et al* (2015) these service garages (roadside garages) are mostly handicapped in terms of modern facilities among others in their quest to providing quality services to their prospective customers. It is against this backdrop that this research question sought to elicit from respondents whether roadside garages have modern hand tools as well as other sophisticated equipment for handling customer needs and services.

According to the study majority (88.9 percent) confirmed the availability of basic hand tools like spanners, pliers, screw drivers, hammers, etc. However, it is significant to note that the outcome of the study confirms the assertion by Baidoo *et al* (2015) since 85 to 96 percent of the respondents did not have modern equipment like diagnostic tools(electronic diagnose device, multi meter, stroboscopic device etc), power tools **(**tyre remover machine, engine lift, vehicle lift, air compressor etc) and work shop facilities. It is further clear from study results that none of the roadside garages in the cape coast metropolis had a test rig, a further confirmation to the study conducted by Tettehfio *et al* (2015) that shows that, almost all roadside garages lack the basic electronic diagnosis

equipment to find faults on electronic vehicles and repair them. The implication is that roadside garages in the absence of these modern tools may resort to try and error.

5.4 General Challenges facing the roadside garages

The study shows that 85.2% of the respondents agreed that difficulty in securing funding for operations is a challenge they face while 14.8% were uncertain. The study results conclude that difficulty in securing funding for operations is a challenge faced by the garages. The study results depicts that 81.5% of the respondents agreed that inadequate facilities to organise in-service training to upgrade the skills of staff is a challenge while 18.5% of the respondents disagreed. The study concluded that inadequate facilities to organise in-service training to upgrade the skills of staff is a challenge faced by the garages. The study results holds it that 88.9% of the respondents agreed that lack of support from government is a challenge while 11.1% of the respondents were uncertain. The study indicates that 92.6% of the respondents agreed that high interest on bank and financial institution loans is a challenge while 7.4% of the respondents were uncertain. The study shows that majority 96.3% of the respondents agreed that high cost of tools and equipment is a challenge facing the garages while 3.7% of the respondents were uncertain. The study shows that 81.5% of the respondents agreed that difficulty in acquiring land for the establishment of garages is a challenge facing the garages while 18.5% of the respondents disagreed. According to these writers cost competitiveness, customer orientation, lead-time, are some key factors, constraint or the challenges that the local auto garages will have to imbibe to survive in the new global set-up". It is significant enough to note that Rajeshkumar and Rajendra (2011) identify a similar challenge or constraint in the SMEs of the automobile service industry that goes to complement Osei*et al.* (1993), Daniels and Ngwira (1993), Aryeetey *et al.* (1994), Parker *et al.* (1995) and others

outlined as the challenge or constraint facing small scale garages in general. Rajeshkumar and Rajendra (2011) indicated in their report that these automobile companies face the limitations of being small scale garages, like low capital base, limited generation of surplus funds for re-investment due to tight working capital cycle, lack of awareness of business opportunities, inadequate exposure to international environment, limited geographical diversity of markets, obsolete technology, poor infrastructure facilities, etc.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary

The main purpose of the study is to do assessment of service quality of roadside garages compared to standard auto garages in Ghana. This study adopted the case study strategy. The targeted population for the study was three hundred (300). The population of the study was made up of costumers of auto garages (commercial drivers, private drivers, and transport managers), workshop managers, and master mechanics of both the standard and road side garages in the Cape Coast Metropolis. Thus 70 customers and 27 mechanics, from standard and road side garages were sampled using random sampling methods.

Random sampling technique was used to select participant for the study. The main instrument that was used to collect information for the study was questionnaire. Data was collected through the use of a designed questionnaire and interview guide administered to participants in their workshops. The data was edited to detect and correct, possible errors and omissions that were likely to occur, to ensure consistency across respondents. The SPSS version 18, MS Word and MS Excel was used to analyse the data. Data was presented in tabular form, graphical and narrative forms. In analyzing the data, descriptive statistical tools such as bar graph and pie charts were used.

6.2 Major Findings

The major findings of the research are discussed below:

6.2.1 The service quality of dealership/standard and Local/Roadside Garages in vehicle maintenance

The study indicates that 91.4 percent of private and commercial car drivers have obtained some level of education at least at the basic level. Again 50 percent have a tertiary education. this is pertinent because, the information that will provided for in this research will be well informed since 91 percent have some form of formal education.

The study findings depict that, road side garages exhibit empathy and responsive service quality compared to the standard garages. With an average of 11.5 to 20 percent uncertainty, majority of the respondents ranging between 42 to 50 percent indicating agree and strongly agree to the empathy and responsiveness of the road side garages. This is a confirmation from the study that 42 to 58 percent of the respondent agree or strongly agree that roadside garages have the ability to interpret vehicle problems, have adequate knowledge and experience on the job and finally get the job done at the first time. It is however significant to note that 68 to 72 percent of the respondent disagree or strongly disagree that roadside garages provide checklist on vehicles and wash the car after servicing with 10 to 13 percent uncertainty.

6.2.2 The best maintenance practices that will improve service quality of the Local/Roadside Garages in vehicle maintenance

The study gave clear indication that roadside garages provide some best maintenance practices like negotiation of prices and their shops or tools are easy to be located with 69 to 74 percent agree or strongly agree. It is important to note that the uncertainty has a percentage of 4 to 9 percent. Significantly, most of the respondents also disagree or strongly disagree that roadside garages practice very good maintenance practice as 64 to 80 percent indicated that they do not look presentable, do not have good reception, washrooms and neither do they keep records or pay attention to safety rules. This is an indication of poor maintenance practices among roadside garages.

6.2.3 The possible challenges affecting service quality of the Local/ Roadside Garages in vehicle maintenance

According to the study majority (88.9 percent) confirmed that the basic hand tools such as spanners, pliers, screw drivers, hammers were available at both road side and local garages. It is further clear that none of the roadside garages in the cape coast metropolis had a test rig. The study shows that majority 85.2% of the respondents agreed that difficulty in securing funding for operations is a challenge they face. The study results depicts that 81.5% of the respondents agreed that inadequate facilities to organise in-service training to upgrade the skills of staff is a challenge. The study results holds it that 88.9% of the respondents agreed that lack of support from government is a challenge.

The study indicates that 92.6% of the respondents agreed that high interest on bank and financial institution loans is a challenge. The study shows that majority 96.3% of the respondents agreed that high cost of tools and equipment is a challenge facing the garages. The study shows that 81.5% of the respondents agreed that difficulty in acquiring land for the establishment of garages is a challenge facing the garages.

6.3 Conclusions

The study findings depict that, road side garages exhibit empathy and responsive service quality compared to the standard garages. This concludes that roadside garages have the ability to interpret vehicle problems, have adequate knowledge and experience on the job and finally get the job done at the first time. The study further concludes that roadside garages provide some best maintenance practices like negotiation of prices and their shops or tools are easy to be located. Moreover, road side garages practiced poor maintenance practices.

The study revealed that the basic hand tools like spanners, pliers, screw drivers, hammers were available at both road side and local garages; however, none of the roadside garages in the cape coast metropolis had a test rig. The major findings concluded that the challenges faced both standard garages and road side garages are difficulty in securing funding for operations, inadequate facilities to organise in-service training to upgrade the skills of staff, lack of financial support from government, high interest on bank and financial institution loans, high cost of tools and equipment, difficulty in acquiring land for the establishment of garages are challenge facing the garages.

6.4 Recommendations

Based on the major findings and conclusions of the study, the researcher recommended that;

1. The Government of Ghana through the Bank of Ghana should provide flexible loan facilities with low interest rate to both standard and roadside garages to enable them secure funds to enhance their operations.
2. The stakeholders in the automobile industry should periodically organise in-service training to upgrade the skills of the mechanics in the industry.
3. The government of Ghana should support the roadside garages to acquire tools and equipment to improve their operations.
4. The young graduates pursuing auto and mechanical engineering should be encouraged to establish standard garages to improve the quality of service in the industry.

6.5 Suggestions for Further Research

Based on the recommendations of the study, the researcher suggested that a similar study should be conducted to investigate the impact of organizing periodic in-service training for mechanics on service quality of vehicle repairs. Another area that needs to be researched into is the cost of tools and equipment and its impact on service quality of roadside garages in Ghana.

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APPENDIX A

University of Education, Winneba

College of Technology Education, Kumasi Campus

This questionnaire is designed for private car drivers, commercial car drivers and fleet managers to assess the service quality of roadside motor vehicle garages as compared to standard garages. Be assured that any information given would be used solely for academic purpose and will be treated with the highest confidentiality it deserves. Please your sincere responses are highly needed. Thank you.

SECTION A: DEMOGRAPHICS

INSTRUCTIONS: For questions 1-5, please kindly select by ticking (√) all that apply, which in your opinion, is the most appropriate.

1	Your gender	Male [ ] Female [ ]
2	Your age group	(a) 20 below [ ] (b) 21-30 [ ] (c) 31-40 [ ] (d) 41-50 [ ] (e) 51-60 [ ] (f) 61 above [ ]
3	Educational level	(a) No formal education [ ] (b) Basic [ ] (c) Secondary/ Technical (d) Tertiary [ ]
4	Which customer are you	Private car driver [ ] Commercial car Driver [ ] Fleet manager [ ] Others [ ] Please specify …….
5	Driving experience	(a) 0 -10 yrs [ ] (b)11-20 [ ] (c) 21-30 [ ] (d) 31- 40 [ ] (e) 41 and above [ ]

SECTION B: Compare the Quality of Services of Roadside garages to standard garages. Please select the appropriate options that best suit your perspective for each statement by ticking (√)at the right column box using the following scale; 1 = Strongly disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly agree;

	Customer Care (Empathy And Responsiveness)					
S/No.	**Variables**	**1**	**2**	**3**	**4**	**5**
6	Roadside garages are friendlier than the standard garages.					
7	Roadside garages have patient to listen to my complaints than the standard garages.					
8	Roadside garages understand my complaints better than the standard garages.					
9	Roadside garages explain in details the faults on my vehicle to me better than the standard garages.					
10	Roadside garages always show concern after service to make sure I am satisfied with work done.					
11	Roadside garages give me more personal attention than the standard garages.					
12	Roadside garages are always available to attend to my needs than the standard garages.					
13	Roadside garages are more courteous and polite than the standard garages.					
14	Roadside garages provide prompt and quick response to service my vehicle.					
15	Roadside garages wash and make my vehicle clean before returning it to me after servicing.					

	Quality of Vehicle Repairs (Assurance and Reliability)	**1**	**2**	**3**	**4**	**5**
16	Roadside garages have the ability to interpret vehicle problems.					
17	Roadside garages pay attention to service details.					
18	Roadside garages are very efficient in repair services.					
19	Roadside garages use quality spare parts and materials to service my vehicle.					
20	Roadside garages have knowledge and experience on the job.					
21	Roadside garages have the ability to get it right the first time.					
22	Roadside garages provide checklist of things checked on my vehicle.					
23	Roadside garages use try and error to repair my vehicle.					
24	My vehicle usually develops more faults or breaks down few days after repairs by the roadside garages.					
25	The mechanics of Roadside garages have the necessary skills and the ability to repair modern electronic vehicles.					
26	Roadside garages after servicing my vehicle make me feel confident and secure to drive my vehicle.					
27	I am satisfied with the quality of repairs on my vehicle by the roadside garages.					
	Cost of Repairs (Empathy)	**1**	**2**	**3**	**4**	**5**
28	The cost of repairs of roadside garages is moderate.					
29	Roadside garages give me value for money services.					
30	Minor repairs are done on my vehicle without additional cost by roadside garages.					
31	Roadside garages have flexible terms of payment after servicing my vehicle.					
32	Roadside garages communicate to me promptly when there is the need for price change due to additional works.					
33	Roadside garages are always willing to negotiate for cost of repairs					
SECTION C: Identify the possible challenges affecting quality of services of roadside garages. Please select the appropriate options that best suit your perspective for each statement by ticking (√)at the right column box using the following scale; 1 = Strongly disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly agree;						
	Facilities, Equipment and Tools (Tangibles)					
33	Roadside garages can be located and accessed easily.					
34	Roadside garages have clean and neat environment.					
35	The mechanics of roadside garages look more presentable.					
36	Roadside garages have good reception and provide comfortable seating for customers while waiting.					
37	Roadside garages have wash rooms and a place of convenient for staff and costumers.					
38	Roadside garages have good record keeping.					
39	The mechanics of Roadside garages pay attention to safety rules in the workshop.					

APPENDIX B

University of Education, Winneba

College of Technology Education, Kumasi Campus

This questionnaire is designed for workshop managers and master mechanics to assess the challenges of service quality of roadside motor vehicle garages as compared to non-roadside garages (standard garages). Be assured that any information given would be used solely for academic purpose and will be treated with the highest confidentiality it deserves. Please your sincere responses are highly needed. Thank you.

SECTION A: DEMOGRAPHICS

INSTRUCTIONS: For questions 1-5, please kindly select by ticking (√) all that apply, which in your opinion, is the most appropriate.

1	Your gender	Male [ ] Female [ ]
2	Your age group	(a) 20 below [ ] (b) 21-30 [ ] (c) 31-40 [ ] (d) 41-50 [ ] (e) 51-60 [ ] (f) 61 above [ ]
3	Educational level	(a) No formal education [ ] (b) Basic [ ] (c) Secondary/ Technical (d) Tertiary [ ]
4	What is your job title?	Master mechanics [ ] Technician [ ] Workshop manager [ ] Others [ ] Please specify …….
5	Working experience	(a) 0 - 5 yrs [ ] (b) 6 -10 [ ] (c) 11- 15 [ ] (d) 16 - 20 [ ] (e) 21 and above [ ]

SECTION B: Please select the appropriate options that best suit your perspective for each statement by ticking (√)at the right column box using the following scale; 1 = Strongly disagree; 2 = Disagree; 3 = Uncertain; 4 = Agree; 5 = Strongly agree;

	Training of staff	1	2	3	4	5
6	The staffs in my garage often upgrade their skills through in-service training.					
7	I am willing to go for in-service to upgrade my skills.					
8	There is no in-service training program available for me to go for training.					
	Source of funds for establishing or expanding your garage					
9	The main source of funding my garage is through personal income.					
10	The main source of funding my garage is through loan from financial institutions such as bank.					
11	The main source of funding my garage is through support from family and friends.					
12	My main source of funding my garage is through government support.					

Section c: please tick the tool(s), equipment and physical facility that are available in your workshop.

	Tools and Equipment:	Tick (√)
13	Basic hand tools e.g. Spanners, pliers, hammers, screw drivers etc	
	Diagnostic tools:	
14	Electronic diagnose device (OBD Scan tool)	
15	Multi meter	
16	Stroboscopic device	
17	Personal computer	
	Power tools:	
18	Tyre remover machine	
19	Engine lift	
20	Vehicle lift	
21	Battery charger	
22	Air compressor	
23	Discs late machine	
24	Drilling machine	
25	Grinding machine	
26	Test rig	
	Facilities:	
27	Office	
28	Dressing room	
29	Wash room	
30	Service pit	
31	Adequate space for parking vehicles.	
32	Adequate shelter for repair work in all weather conditions.	
33	Spare parts shop	