

**CAPACITY MANAGEMENT STRATEGIES AND SERVICE QUALITY IN
PETROLEUM DISTRIBUTION FIRMS IN KENYA**

BY

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DECLARATION

This research project is my original work and has not been submitted for another degree of this or any other university or institution of learning.

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DEDICATION

This study is dedicated to my loving family, for their support, encouragement and patience during the entire period of my study and continued prayers towards successful completion of this course.

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ABSTRACT

Capacity is in the middle of every product or service an organization offers. No business activity can take place without resources. The quality of product or service offered depends heavily on the management of the resources involved. Capacity Management is concerned with matching the capacity of the operating system and the demand placed on that system. The study sought to establish the relationship between capacity management strategies and perceived service quality in the oil distribution sector in Kenya. To allow generalization of the research findings to several oil firms a descriptive survey research was conducted. The entire population of 16 operation managers was used to represent the oil companies. Stratified proportionate random sampling technique was used to select the study sample for the customers. The study population was 212 customers from which 64 were sampled. Data collected from operation managers was to determine the capacity management strategies used in the organization while sampled customers gave information on perceived service quality. According to the study results, chase capacity management strategy is the capacity management strategy mostly employed by firms in the oil distribution sector in Kenya. The study also established that capacity management approach and service context can interact and the interaction positively influences perceived service quality. In conclusion the study found out that capacity management strategies have a positive and significant effect on service quality in petroleum distribution sector in Kenya.

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ABBREVIATIONS AND ACRONYMS

SERVQUAL	Service Quality
ORG	Organization
CMS	Capacity management strategies
C	Chase capacity management strategies
Co	Coping capacity management strategies
L	Level capacity management strategies
HF	High Frequency
LF	Low Frequency
HV	High Value
LV	Low Value

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Capacity is in the middle of every product or service an organization produces or offers. No business activity can take place without resources. The quality of product or service offered depends heavily on the management of the resources involved. Whether in manufacturing or in services, managing operations is at a broad level the same. However services have some unique decisions especially where capacity is concerned. In services, the output must have an intangible element and it must be impossible to disconnect the production of a service from its consumption (Geng and Jiang, 2009). This is unlike manufacturing where the output is tangible and the production and consumption of goods can be easily separated. Each service is unique, it is one-time generated, rendered and consumed, can never be exactly repeated and cannot be stored for future use as services have little or no tangible components. Goods are standardized and produced in masses thus not unique and can be inventoried in alignment to market demand forecasts.

Capacity Management is concerned with matching the capacity of the operating system and the demand placed on that system. Capacity management involves decision making on planning, analyzing and optimizing capacity to satisfy demand in a timely manner and at a reasonable cost (Van Mieghem, 2003). Due to the overlap in production and consumption, the strategic decisions involved in services operations are much more than is the case in manufacturing. The decisions on how much capacity to be made available are made at the same time as the decisions on how much capacity to utilize thus there is no possibility of producing the complete service package in advance of demand and

holding it as an inventory. Capacity management enables managers to plan ahead, to respond to business requirements speedily and to manage resources efficiently. It is part of a larger corporate strategy which is a long term plan to achieve a certain target (Jones and Kutsch, 2007). Operations managers will either succeed or fail in the process of balancing quality of service and resource management, depending on their skill in managing capacity to match demand.

1.1.1 Capacity management strategies

Capacity is the capability of a manufacturing or service resource such as a facility, process, workstation, or piece of equipment to accomplish its purpose over a specified time period (Alp and Tan, 2006). The resources available to the organization e.g. facilities, equipment, and labour, how they are organized, and their efficiency as determined by specific work methods and procedures determine capacity. Tan and Alp (2009) defines the capacity of a service as the highest possible amount of output that may be obtained in a specific period of time with a predefined level of staff, installations and equipment. Capacity in service operations is divided into fixed and variable capacity. Fixed capacity largely determines the maximum capacity of the service. The fixed investments are normally significant and irreversible. They are often added in large discrete units thus impossible to match exactly capacity with demand and when to invest becomes a critical decision. Variable capacity is related to the reallocation, rescheduling and/or reconfiguration of tasks (Buxey, 2003). According to Jones and Kutsch (2007), service organizations use three main capacity strategies use to manage demand i.e. level capacity, chase demand and coping demand management.

Chase strategy is about adjusting or controlling the level of capacity to match demand by altering the number of service providers and/or the hours worked, sharing capacity between different parts of the service delivery system, transferring resources to where they are needed at that time, using outside suppliers through subcontracting or leasing to provide resources and asking customers to provide more resource by way of self service. It applies more when customers will not wait long for the service and there is an immediate need to get the process running (Briec et al, 2001). Level capacity strategy requires organizations to set their capacity at a reasonable level and live with it. It seeks to influence the level of demand by way of price changes, advertising and promotion, developing off peak demand, use of appointment and reservation systems and making customers queue for the service thus it is applicable where capacity is limited and the focus is on influencing demand to be in line with capacity. The demand should be visible before the time of use and customers are willing to wait when demand cannot be satisfied, (Green, 2005). Coping strategy aims at improving the overall delivery of service quality while achieving resource productivity targets. According to Buxey (2003), it entails raising the prices during the peak times and lowering them during the off-peak to manage demand. Coping strategy requires service managers to persuade potential customers to wait, get a system for prioritizing customers where there are conflicting demands from a number of customers and train staff to increase their willingness to solve problems as they arise (Armistead and Clark, 1994).

1.1.2 Service Quality

Quality is meeting the customer's needs in a way that exceeds their expectations. It can be objective or subjective. Objective quality is the degree of compliance to a

predetermined set of criteria while subjective quality is the level of perceived value as reported by the person who benefits from a good or service. Perceived quality of a service represents the properties of that service which are valued by the consumer and thus a fulfillment of their expectation (Cook, 2008). Haywood-Farmer (1988) in his attribute service quality model sets out three basic attributes of services namely physical facilities and processes; people's behaviour and professional judgment. Each of these attributes consists of several factors.

Zeithaml, Parasuraman and Berry (1988) in their SERVQUAL model set out service quality as a function of the differences between expected quality, manager's belief of the consumer's needs, what has been specified and what is actually delivered. They list tangibility, reliability, responsiveness, assurance and empathy as the dimensions which capture and understanding of the customers. Yang and Fang(2004) in their perceived service quality model states that a firm has to match the expected and perceived service to each other so that consumer satisfaction is achieved. He identified three components of service quality, namely: technical quality, functional quality and image. In the SERVQUAL model tangibility is the appearance of physical resource or the physical evidence of a service, reliability is the capability to execute the promised service consistently, accurately and in a timely manner while responsiveness is the willingness of employees to help customers and offer prompt service (Greenland, Coshall and Combe, 2006). Assurance is the skills, knowledge and courtesy of employees and their capacity to express trust and confidence while empathy is gentle, individualized attention the firm provides its customers. In the perceived service quality model, technical quality relates to the quality of what a customer receives as a result of their interaction with the service

provider while functional quality concerns how the service was delivered. Image as held by the customer is built up after prolonged interaction and word of mouth and affects the tolerance to deficiency in the technical and functional quality of the service (Zeithaml and Bitner, 2003). The study will focus on four dimensions of the services that were deemed to be affected by capacity management. These are tangibility, reliability, responsiveness and assurance.

1.1.3 Capacity management strategies and service quality

According to Rudberg and West (2008), capacity management has a considerable impact on the quality of the service as perceived by customers. Capacity decisions relates the potential output from the resources available to actual output which depends on service mix, the way capacity is managed and the extent of capacity gaps. According to Chase and Bowen (1991) aspects of capacity decisions are the extent of capacity change, speed and flexibility of that change. These changes in capacity are intended to deal with rapid fluctuations in demand while ensuring consistency in quality of service delivered. The effect of capacity management on the quality of service can be investigated in the petroleum distribution sector.

In service operations, capacity management is concerned with balancing the capacity of the service delivery system and the demand from customers to minimize customer waiting time and to avoid idle capacity. The objectives to achieve are minimal operating costs and service quality. Participation of the customers in the service delivery process and the nature of services limit the standard options that are available for matching supply with demand (Buxey, 2003). Since capacity is part of the product, decisions on how much capacity to make available are made at the same time as the decision on how

to utilize the capacity. The effect of this is that capacity decisions significantly influence service quality as perceived by the customer.

1.1.4 Petroleum distribution sector

The petroleum distribution sector in Kenya is made up of the state owned Kenya Pipeline Company and Kenya Petroleum Refineries Limited and the private oil marketing and distribution companies. The sector is capital intensive with fixed investments in jetties, pipelines, depots, petrol stations and others. Outsourced capacity elements include trucks and distribution work force (Petroleum Institute of East Africa, 2013).The outlet to consumers is through retailers, mainly petrol stations and direct sales.

The intensity of competition in the petroleum distribution sector is high because the main oil distribution companies are of roughly equal size and each attempts to gain dominance over another. Fuels are generally homogeneous products from the same source, which are transported the same way and sold in a similar manner. They have no ready substitutes and are usually aimed at the same customer group. This gives the distributors power over the retailers and the final consumers. Product differentiation is closely tied to the marketer's corporate reputation. There are barriers to entry owing to the limited access to distribution channels and the high capital cost of entry. Already established companies finance distribution outlets to consumers making it difficult for new companies to distribute their products. Exit barriers are also high due to the high investment in fixed assets that are less likely to be transferred into another industry (Petroleum Institute of East Africa, 2012).

Majority of the petroleum products are imported via the open tender system and the base cost is dictated by international prices of crude. This makes the landing import costs the same for all the oil companies, even though the storage and the transportation costs may be different. The selling price of these products is regulated by the state via the Energy Regulatory Commission. Therefore to a large extent the costs and selling prices are the same and the companies will have to mostly compete on service quality (Old Mutual Securities Research, 2013). Service quality in the oil and gas sector is mostly determined by reliability in terms of supply, which is largely dependent on the physical resources such as number of petrol stations; presence across the country, number of trucks and proximity to depots among others. The key issues in this sector include service quality goals in a context in which a balance of capacity is critical.

1.2 Statement of the problem

The objective of service capacity decisions is to match the level of operations with the level of demand in order to find the best balance between cost and service levels (Li, and Markowski, 2006). A discrepancy between the capacity of an organization and the demands of its customers results in inefficiency, either in under-utilized resources or unfulfilled customers. While inadequate capacity can lead to the loss of the customer and business, excess capacity can drain the company's resources and prevent investments into more lucrative ventures. The capacity strategies chosen to answer the question of when capacity should be increased and by how much are critical as failure to choose an appropriate strategy can be damaging to the overall performance of the organization (Cannella, Ciancimino and Márquez, 2008).

The petroleum distributors operate in a price controlled context. They therefore must find means to be profitable and yet a balance between capacity and demand is not always possible. Demand for petroleum products fluctuate from season to season thus matching the level of operations with the level of demand becomes difficult and finding the best balance between cost and service levels becomes necessary. Petroleum distribution in Kenya is bogged down by myriad of issues relating to dependability in handling customer's problems and also delays in providing services at the promised time. Balancing customer demand and service capacity is critical for the petroleum distributors and an increased use of effective capacity is needed to maximize efficiency.

Few studies have been published on both capacity management in services and service quality. Barnhart *et al* (2012) studied demand and capacity management in air transportation while Klassen and Rohleder (2002) examined demand and capacity management decisions in services in general and how they impact on one another. A study by Adenso-Diaz *et al.*, (2002) looked at capacity management model in service industries with a focus in nursing and catering while Armistead and Clark (1994) examined the coping capacity management strategy in service and its influence on quality performance. Armistead and Clark (1991) focused on capacity management in services and its influence on quality and productivity performance. Locally, Ochieng' (2006) did an investigation of capacity management strategies: the case of Kenya Airways while Ong'ondo (2013) conducted a study on effect of capacity management strategies on service quality in Safaricom. The literature on quality management in services has also been expanding rapidly. Berry *et al.*, (1990) looked at a conceptual model of service

quality and its implications for future research. Armistead and Clark (1992) studied the role of capacity management in service quality.

These studies do not address issues relating to capacity management and its effect on service quality in the petroleum distribution sector. In this sector, distributors have to compete on quality but in a context in which the basic product is not differentiated. Capacity issues in petroleum distribution are a factor in service quality as demand is not constant. The distributors have to choose a capacity strategy with which to pursue quality goals amongst Chase capacity strategy, Level capacity strategy or a mix of both. Chase strategies may be affected by the speed of capacity changes required but may result in problems in consistency which affects expectation and hence perceived quality. The level strategy is a problem when demand side is unstable and may also affect expectation. This study investigates and sought to answer the question; Does the approach of capacity strategy relate to perceived service quality?

1.3 Research Objectives

This study was guided by the following objectives:

- i. To establish capacity management strategies of firms in the oil distribution sector in Kenya.
- ii. To determine perceived service quality level in the oil distribution sector in Kenya.
- iii. To determine the relationship between capacity management approach and perceived service quality in the oil distribution sector in Kenya.
- iv. To determine if capacity management approach and service context can interact and have an impact on the perceived service quality in the oil distribution sector in Kenya.

1.4 Value of the Study

This study will give distributors in the petroleum industry an insight on how capacity management strategies they adopt affect their service offering. Adopting a capacity management strategy enables companies to identify underused capacity and opportunities for consolidation. The companies can then reallocate capacity as necessary and monitor the impact which can save them money on previously wasted resources. The study will also enable them to manage demand according to business priorities, so they can make sure that certain critical processes always have enough capacity to run effectively. It will help them develop a long-term strategy for the business by documenting both the levels of current utilization and forecasted requirements.

The findings of the study will also add to literature on the subject and will be an ideal reference material on the study of effects of capacity management strategies on service quality. The study will also form basis of further research from the recommendations that will be made for further studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

In this chapter, the theoretical literature from significant past studies, both recent and historical that is related and consistent with the objectives of the study is reviewed. Important issues and practical problems are brought out and critically examined so as to determine the current facts. The literature has been reviewed along the following areas; Capacity management strategies in services, perceived service quality concept, Capacity management strategy and perceived service quality and contextual factors in service quality. Finally, the literature is summarized and a conceptual framework developed.

2.2 Capacity Management Strategies in Services

There are three main capacity management strategies i.e. level, chase and coping strategy (Jones and Kutsch (2007). Each of these strategies should be adopted when its advantages outweigh the disadvantages. Often service companies have to opt a mixed capacity strategy as it is very hard to forecast demand and balance existing capacity (Jones and Kutsch, 2007).

2.2.1 Level capacity Strategy

In this strategy, the capacity is maintained at a constant level all along the planning period and any fluctuations in demand are ignored. High under utilization of resources can make this capacity option very expensive but also very useful where the opportunity cost of single lost sale is very high (Geng and Jiang, 2009). In service organizations there is always a possibility of a large number of members coming in any time and very low number of members in off-peak season resulting in either a waiting line or under utilization thus a pure level capacity plan would not be suitable.

2.2.2 Chase Capacity Strategy

Chase strategy tries to match the capacity levels according to the changing demand patterns. To actualize the strategy flexible working hours, different number of staff and often different number of equipment in each period is required. It is suitable for companies which produce either perishable goods or cannot store their outputs such as customer processing. It has a clear advantage of having the appropriate level of staff all the time according to the demand of a particular season (Alp and Tan, 2006). This strategy requires adjustment of capacity through different means i.e. offering over time in peak and lesser hours in off-peak periods, varying number of employees according to the seasonal requirements, part time contracts and subcontracting (Jones and Kutsch, 2007). In this strategy the number of employees would need to be rescheduled to increase the current service levels. Developing a new facility will also chase the increase in demand which is expected due to new businesses down town.

2.2.3 Coping Capacity Strategy

The objective of this strategy is to shift the burden of peak period to off-peak period. Either the demand is changed through various methods or alternate products or services are offered to fill off-peak capacity. The most widely applied method in service industry is pricing to shift the peak demand to off-peak when people are not very interested in buying. Advertising also helps to smooth demand but is expensive and if un-planned can result in financial loss. Organizations with different demand patterns develop new products and services covering the whole year (Van Mieghem, 2003). It is proposed that service organizations should either slightly rise prices during the peak times or provide services which cost lesser to manage demand.

2.3 Empirical Studies

Ong'ondo (2013) conducted a study on effect of capacity management strategies on service quality in Safaricom. The study intended to determine the extent of adoption of capacity management strategies, factors influencing implementation of capacity management strategies and to establish the effect of capacity management strategies on service quality in Safaricom retail outlets. The findings showed that implementation of capacity management strategies by Safaricom limited at its various retail outlets throughout Kenya enhanced the provider's quality of service provision. He recommended that management of Safaricom limited should consider putting in place steps to even better its quality of service provision. Though the findings showed that various capacity management strategies were in use at its facilities, it was evident that some elements of capacity management strategies investigated were still in their initial stages of implementation and therefore needs to be strengthened to help fortify their effects on enhancing the quality of service provision.

Klassen and Rohleder (2002) set out to determine how demand and capacity decisions work together. They use a simulation based on theoretical and empirical insights to explore the impact of various capacity decisions on profitability and operations. The issues studied include, how demand options such as reservations, price differentials and advertising affect one another, how capacity options such as scheduling, hiring or laying off employees and renting or sharing capacity affect one another, whether some options are more effective than others, and to what degree various options should be implemented in various scenarios. They conclude that demand and capacity decisions do indeed impact on each other. Both Chase and Level capacity strategies were evaluated in

the study. Limitations noted were; first the study was a simulation under a controlled environment, how this would work in practice in an open environment has to be determined, second; the study sample is not stated nor are the firms sampled specified thus one cannot determine whether it was adequate to arrive at the conclusions made, and third the study was carried out in Canada and its application to other geographical and sectoral contexts can only be determined.

Adenso-Diaz *et al* (2002) sought to model capacity requirements based on the nature of services and service demand. The model was tested in an internal medicine unit in a hospital nursing department and in a hotel both based in Spain. Delphi methodology was applied to determine the standard execution times of the different general nursing tasks and the frequency of each task in relation to the type of dependency of the patient. In both studies, total quality functions were developed to establish minimum staff needed to carry out the tasks. In conclusion they argue that their model can be applied in diverse service sectors where there is a flexible workforce with limited staff and variable activities are carried out depending on the type of customer therefore requiring adequate allocation of capacity that maximizes perceived quality. The main problem identified in this study is that their model is limited to only one capacity type, staff; while capacity is made up of several others elements such as physical facilities, equipment and space. Chase capacity strategy was used in the two case studies as they concentrated on the ability to assign staff on the basis of the demand that may arise. Whether the model can be applied in all service sectors, in different geographical contexts require testing.

In their study, Armistead and Clark (1994) proposed a coping strategy to augment the chase and level strategies. They documented a coping action map to present a way of

developing strategies which recognize operations focus, capacity strategies and customer services within a total service delivery process. They found that the issues which confront the service managers for each activity are to some extent determined by the bias of the basic capacity strategy, service managers need to know the effect on perceived service quality and costs in the coping zone when capacity runs out. Some of the actions identified to help minimize coping issues include being careful about over promising what can be achieved in a period of time, persuading potential customers to wait, system for prioritizing customers where there are conflicting demands from a number of customers, avoid rushed services, use of information systems and updated technology and training of staff to increase their willingness to solve problems as they arise. The case study in this research paper was a hypothetical security company in the United Kingdom thus the issues in consideration are generalization to different industries in an actual operating environment and if this can be applied in the Kenyan context.

2.4 Perceived Service Quality Concept

This theme reviews two research papers and a journal. The research papers identify the determinants of service quality while the journal classifies the determinants into those that are predominantly satisfiers and those that are predominantly dissatisfiers.

Yang and Fang (2004) describe technical quality, functional quality, and company image as significant elements to justify the service quality of a service firm. Technical quality refers to what outcomes the consumer receives from a service organization while functional quality refers to how that service is provided. Image creates favorable attitudes to the service providers. Combinations of all three attributes make a positive attitude towards a service organization. Yang and Fang empirical evidence was based on data

collected from Swedish firm executives. Survey questionnaire approach, Five-point likert type scales and basic statistical analysis were used. They conclude that the two quality dimensions are interrelated and the importance of image as held by the customer should be recognized. Even though a wide range of service industries were included in the study, the petroleum distribution sector can be tested in a Kenyan context.

Parasuraman et al., (1985) proposed a service quality model which identifies the gaps of service quality of the service organization and lists ten determinants that can be used to measure service quality. Zeithaml, Parasuraman & Berry (1990) reduced the determinants to five - tangibility, reliability, responsiveness, assurance and empathy, the basis for their service quality measurement instrument, SERVQUAL. Theirs was an exploratory research where insights were obtained from focus group participants and in- depth executive interviews. Further research is required to measure the factors proposed in this model empirically.

The two service quality models proposed by Parasuraman et al (1985) and Yang and Fang (2004) are related. Parasuraman et al (1985) five components of service quality measures the functional quality dimension. Functional quality relate to factors such as behavior, attitude, accessibility, appearance, customer contact, internal relationship and service-mindedness. However researches that directly link the concepts of both models as well as how to integrate these service quality concepts into managing the customer's satisfaction would need to be documented.

Johnston (1995) in his study seeks to classify determinants of service quality into those that are predominantly satisfiers and others that are predominantly dissatisfiers. The

study demonstrated that some determinants of quality predominate over others and the sources of dissatisfaction are not necessarily the obverse of the sources of satisfaction. Attentiveness, responsiveness, care and friendliness were listed as satisfiers while integrity, reliability, responsiveness, availability and functionality were sources of dissatisfaction. Johnston (1995) findings that responsiveness is a key quality determinant concur with Wong (2000). However while Wong (2000) identified reliability as the main source of service quality and implied that the determinants that tend to satisfy are the obverse of those that dissatisfy, Johnston (1995) finds that reliability is not a crucial source of satisfaction but it is a dissatisfier and the determinants associated with dissatisfaction are significantly different from those that create satisfaction. Having carried out the study in a bank in the United Kingdom, applicability to other service industries requires testing to determine extent of the applicability of the findings and also if this can be applied in the Kenyan context.

2.5 Capacity Management Strategy and Perceived Service Quality

This literature examines the interaction between capacity management and perceived service quality. An empirical paper is reviewed. Armistead and Clark (1992) carried out a survey to find out the most important features of service quality for service organizations, how service firms manage the balance between capacity and demand to satisfy demand, which aspects of quality suffer when demand exceeds supply, measures taken to minimize the loss of quality in these circumstances and actions taken to recover from mistakes caused by either the customer or the service firm. They sought to discover the extent to which service organizations make a link between the quality level perceived by their customers and the strategy they adopt to manage the capacity of their resources

as well as find out the extent to which service managers understand capacity utilization and how they manage it. Some of their findings include; when there is insufficient capacity in the service organization the aspects of service quality which suffer are those which customers perceive to be the most important, the use of forecasting to predict demand though recognized as useful is poorly implemented, resource capacity is not managed in periods of high demand, reliability of service delivery is a winning quality dimension as those organizations that are consistent are perceived to have high quality levels and poor capacity management encourages the firefighting culture as fluctuations in demand may not always be matched effectively.

The survey was carried out across the service sectors businesses offering services to a limited number of large customers and with standard services. The issues therefore are, one; whether the same applies to a service industry with many small customers and customized services and two; if this can be applied in the Kenyan context.

2.6 Contextual Factors in Service Quality

The contextual factors identified relate to aspects of people and events. A conceptual paper and an empirical paper are reviewed. In their conceptual paper, Antonacopoulou and Kandampully (2000) identify the significance of people in creating and adding value to perceived service quality. They note that the interaction between the front-line employees, who deliver the service, and the customer who experiences the service directly influences service output and is important in determining the perceived quality of the offered service. They concluded that people are the key to creating and sustaining quality thus the need to introduce mechanisms which allow flexibility and creativity and encourage people to take initiative in service delivery. They note that service providers

must have capacity through their personal touch, employee empowerment and a culture that encourages initiative and inquisitiveness to add value perceived service quality. They recommend training front office personnel to understand the complex behaviours of employees in order to manage service encounter. Their paper was a discussion of literature and may need to be tested through an empirical research.

Bitner, Booms and Tetreault(1990) in their empirical research identified events and behaviours of contact employees that cause satisfactory and dissatisfactory service encounters for customers. They note that the service encounter creates a lasting impression on the customer's mind, determining customer satisfaction and customers' subsequent perception of service quality. Using critical incident technique they classified the employees' behaviours into employee response to service delivery system failures, employee response to customer needs and requests and unprompted and unsolicited employee actions to account for all satisfactory and dissatisfactory incidents. They conclude that with proper employee response dissatisfactory encounters due to delivery system failure can be transformed to satisfactory encounters while proper response to customer needs and requests can lead to customer satisfaction. Having carried out their research in three service industries; hotels, restaurants and Airlines the issue to be tested is whether this can be generalized to the petroleum distribution sector in a Kenyan context. Both papers conclude that people are an important element in perceived service quality as well as a key element of an organization's capacity.

2.7 Summary

In summary the reviewed literature on capacity management strategies reveals that demand and capacity options impact on each other and identifies different approaches to

capacity management strategies. It also establishes a model to determine the minimum capacity levels below which quality may be affected. Perceived service quality literature identifies the dimensions of service quality and attempts to categorize them into satisfiers and dissatisfiers. Finally a link is identified between perceived service quality and capacity management strategies adopted as well as the contextual factors that influence this relationship.

2.8 Conceptual model

The variables can be related as follows.

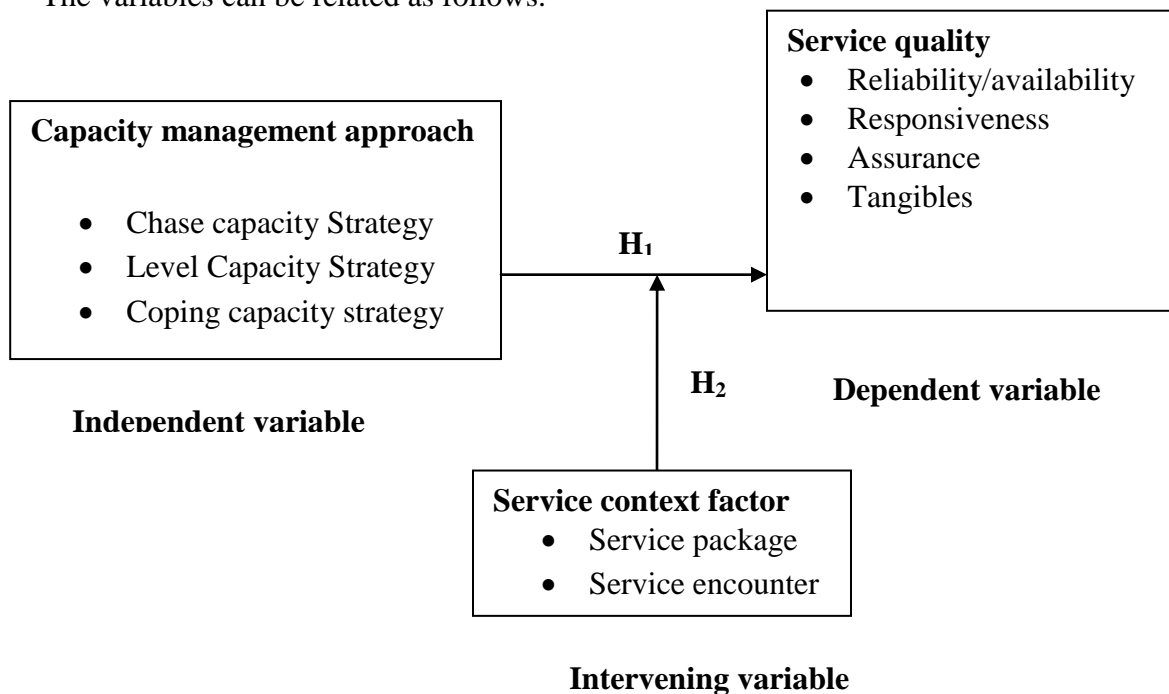


Figure 2.1: Conceptual Model

The model is examined by testing the following hypotheses.

H_1 : The type of capacity management strategy deployed has a significant effect on perceived service quality.

H_2 : The service context factor interacts with capacity management approach and the interaction influences service quality

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The main objective to achieve in the proposed study was to determine whether capacity management has an effect on service quality with reference to petroleum distribution. To achieve this, decisions have been made concerning research design. Data source, data collection method and statistical analysis were performed. This chapter sets out the decision points.

3.2 Research Design

The specific objective of the proposed study was to determine the capacity management strategies and the perceived service quality level in the oil distribution sector in Kenya and the relationship between capacity management approach and perceived service quality. This objective concerns a situation at one point in a given context thus the study was empirical (Cooper & Schinder, 2003). The problem has been reduced to a research question. Formalized research with data at a fixed point was conducted thus the nature of the research was cross-sectional.

To allow generalization of the research findings to several oil firms a descriptive survey research was conducted to answer the “what” and “how” relationships of the proposed study variables Cooper and Schinder (2003). This design was chosen because it is more precise and accurate as it involves description of events in a carefully planned way (Babbie, 2004). It also portrays the characteristics of a population in their natural setting fully (Chandran, 2004). The unit of analysis is proposed to be the individual firms in the oil distribution sector.

3.3 Population

The population of study consisted of the oil distribution companies registered in Kenya, with local network operations and have their head offices in Nairobi and their network customers based in Nairobi in Nairobi region for convenience. There are 16 oil marketing companies with network stations in Nairobi. The respondents representing the oil companies were the operation managers or their equivalent of each company while the station managers represented the customers. This is because most of the capacity decisions are made by those in charge of the operations of the firm. The customers' population consisted of the 212 branded petrol stations in Nairobi.

Table 3.1: Target customers' population

Name of company	Number of service stations
Total Kenya	57
Vivo/shell	53
Kenol kobil	42
Libyaoil	34
Hashi	1
Nock	5
Engen	3
Gulf	1
Petro	2
Hass	1
Essar	3
Tosha	1
Olympic	1
Oilcom	3
Delta	4
Gapco	1
TOTAL	212

Source: Petroleum Institute of East Africa. (2012, 2013), *petroleum insight*

3.4 Sample design

The entire population of 16 operation managers was used to represent the oil companies. Stratified proportionate random sampling technique was used to select the study sample based on the name of the companies. According to Chandran (2004), stratified proportionate random sampling technique produce estimates of overall population parameters with greater precision and ensures a more representative sample is derived from a relatively homogeneous population. Stratification aims to reduce standard error by providing some control over variance. From each stratum the study used simple random sampling to select a sample of 30% of the population (64 service stations). Kotler (2011) argues that samples of about 30% of a population can often give good reliability. The random sampling is influenced by the central limit theorem which indicates that if random samples of observations are selected from any population at different points in time or other the sampling distribution of the means will be approximately normal (Kothari, 2004).

3.5 Data collection

Data was collected from operation managers who were requested to complete the questionnaire to determine the capacity management strategies used in the organization and sampled customers who gave information on perceived service quality. The questions to ask are based on indicators used in (Adenso-Diaz *et al.*, 2002, Klassen and Rohleder 2002 and Armistead and Clark 1994 for the various capacity management strategies, Zeithaml *et al* (1990) for indicators of service quality and Bitner *et al.* for service encounter. To avoid influencing informants, the questions were set in such a way that there was no correct or wrong answer and the informants would not know what is sought.

3.6 Data Analysis

The data obtained was analyzed through descriptive statistics. The mean and standard deviation were used to represent the variables in form of tables. Correlation analysis was used to test the interaction between service context and service quality and capacity management approach and service quality. The significance of coefficients for each independent variable was indicated by the P-Value. The extent and nature of the relationship was indicated by the coefficient and its direction. Discriminant analysis was used to test the mediating effect of service context on the relationship between capacity management approach and service quality. Regression analysis was used to test the relationship between capacity management approach and service quality.

CHAPTER FOUR: RESULTS AND DATA ANALYSIS

4.1 Introduction

This chapter presents the results from the study and data analysis. The multi-item constructs used as indicators of variables and data from each organization are aggregated to obtain a record for all organizations. The results are presented in tables and figures.

4.2 Results

4.2.1 Respondents Received

80 questionnaires were submitted to the 16 participating organizations. The questionnaires were distributed to two categories of respondents; 16 operation managers each from every participating organization and 64 customers of each of these organizations. 15 out of 16 operation managers responded giving a response rate of 93.8% while 61 out of 64 customers responded giving a response rate of 95.3%. This response rate was good and representative and conforms to Mugenda and Mugenda (1999) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

4.2.2 Variable presentation

The multi-item variables used to represent the variables of capacity management strategies, service context and service quality were aggregated and means and standard deviations determined. Results for the investigative issues are presented in table 4.1 below.

Table 4.1: Variable presentation

Organization	CM S	Service Context				Perceived Service Quality																																																																																																																																																													
		Serv. Pack.		Serv. Enc.		Rel.		Res.		Ass.		Tang.		Aggregate																																																																																																																																																					
		HF		HV		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD																																																																																																																																																				
Org. 1	C	HF	10	HV	1	3.96	0.58	3.82	0.64	4.09	0.91	3.41	0.73	3.82	0.72																																																																																																																																																				
		LF	2	LV	11											Org. 2	C	HF	3	HV	0	3.82	0.71	3.57	1.03	4.01	0.54	3.64	0.54	3.76	0.71	LF	6	LV	9	Org. 3	C	HF	4	HV	5	3.68	0.84	3.32	0.42	3.93	0.17	3.87	0.35	3.70	0.45	LF	4	LV	3	Org. 4	C	HF	7	HV	1	4.08	0.82	3.86	0.81	3.95	0.73	3.94	0.63	3.96	0.75	LF	0	LV	6	Org. 5	Co	HF	4	HV	0	3.93	0.91	3.62	0.71	3.90	0.55	4.08	0.46	3.88	0.66	LF	0	LV	4	Org. 6	Co	HF	1	HV	0	3.95	0.99	3.60	0.70	3.85	0.62	4.26	0.42	3.92	0.68	LF	0	LV	1	Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74	LF	1	LV	3	Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38
Org. 2	C	HF	3	HV	0	3.82	0.71	3.57	1.03	4.01	0.54	3.64	0.54	3.76	0.71																																																																																																																																																				
		LF	6	LV	9											Org. 3	C	HF	4	HV	5	3.68	0.84	3.32	0.42	3.93	0.17	3.87	0.35	3.70	0.45	LF	4	LV	3	Org. 4	C	HF	7	HV	1	4.08	0.82	3.86	0.81	3.95	0.73	3.94	0.63	3.96	0.75	LF	0	LV	6	Org. 5	Co	HF	4	HV	0	3.93	0.91	3.62	0.71	3.90	0.55	4.08	0.46	3.88	0.66	LF	0	LV	4	Org. 6	Co	HF	1	HV	0	3.95	0.99	3.60	0.70	3.85	0.62	4.26	0.42	3.92	0.68	LF	0	LV	1	Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74	LF	1	LV	3	Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2								
Org. 3	C	HF	4	HV	5	3.68	0.84	3.32	0.42	3.93	0.17	3.87	0.35	3.70	0.45																																																																																																																																																				
		LF	4	LV	3											Org. 4	C	HF	7	HV	1	4.08	0.82	3.86	0.81	3.95	0.73	3.94	0.63	3.96	0.75	LF	0	LV	6	Org. 5	Co	HF	4	HV	0	3.93	0.91	3.62	0.71	3.90	0.55	4.08	0.46	3.88	0.66	LF	0	LV	4	Org. 6	Co	HF	1	HV	0	3.95	0.99	3.60	0.70	3.85	0.62	4.26	0.42	3.92	0.68	LF	0	LV	1	Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74	LF	1	LV	3	Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2																												
Org. 4	C	HF	7	HV	1	4.08	0.82	3.86	0.81	3.95	0.73	3.94	0.63	3.96	0.75																																																																																																																																																				
		LF	0	LV	6											Org. 5	Co	HF	4	HV	0	3.93	0.91	3.62	0.71	3.90	0.55	4.08	0.46	3.88	0.66	LF	0	LV	4	Org. 6	Co	HF	1	HV	0	3.95	0.99	3.60	0.70	3.85	0.62	4.26	0.42	3.92	0.68	LF	0	LV	1	Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74	LF	1	LV	3	Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2																																																
Org. 5	Co	HF	4	HV	0	3.93	0.91	3.62	0.71	3.90	0.55	4.08	0.46	3.88	0.66																																																																																																																																																				
		LF	0	LV	4											Org. 6	Co	HF	1	HV	0	3.95	0.99	3.60	0.70	3.85	0.62	4.26	0.42	3.92	0.68	LF	0	LV	1	Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74	LF	1	LV	3	Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2																																																																				
Org. 6	Co	HF	1	HV	0	3.95	0.99	3.60	0.70	3.85	0.62	4.26	0.42	3.92	0.68																																																																																																																																																				
		LF	0	LV	1											Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74	LF	1	LV	3	Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2																																																																																								
Org. 7	Co	HF	2	HV	0	3.97	1.08	3.59	0.69	3.80	0.53	4.44	0.65	3.95	0.74																																																																																																																																																				
		LF	1	LV	3											Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79	LF	0	LV	1	Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2																																																																																																												
Org. 8	L	HF	1	HV	0	4.02	0.62	3.97	1.08	4.68	0.92	4.31	0.52	4.25	0.79																																																																																																																																																				
		LF	0	LV	1											Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56	LF	0	LV	2																																																																																																																																
Org. 9	Co	HF	2	HV	0	4.56	0.38	4.32	0.51	4.38	0.61	4.02	0.72	4.32	0.56																																																																																																																																																				
		LF	0	LV	2																																																																																																																																																														

Organization	CM S	Service Context				Perceived Service Quality									
		Serv. Pack.		Serv. Enc.		Rel.		Res.		Ass.		Tang.		Aggregate	
						Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Org. 10	C	HF	1	HV	0	4.56	0.16	4.82	0.25	4.62	0.18	3.96	0.57	4.49	0.29
		LF	0	LV	1										
Org. 11	C	HF	2	HV	1	4.65	0.35	4.82	0.39	4.78	0.39	3.97	0.67	4.55	0.45
		LF	1	LV	2										
Org. 12	L	HF	1	HV	1	4.60	0.30	4.67	0.44	4.63	0.35	4.28	0.60	4.55	0.42
		LF	0	LV	0										
Org. 13	C	HF	2	HV	1	4.69	0.24	4.80	0.40	4.72	0.33	4.32	0.61	4.63	0.39
		LF	0	LV	1										
Org. 14	C	HF	3	HV	1	4.01	0.63	3.87	0.69	4.14	0.96	3.46	0.05	3.87	0.58
		LF	0	LV	2										
Org. 15	Co	HF	3	HV	1	4.19	0.23	4.26	0.28	4.22	0.59	3.87	0.77	4.14	0.47
		LF	1	LV	3										
Aggregate						4.18	0.59	4.06	0.60	4.25	0.56	3.99	0.55	4.12	0.58

Source: Survey data (2014)

4.2.2 Correlation Matrix

A correlation matrix for the variables is shown in the table below

Table 4. 2: Correlation Matrix between service context and service quality

		Service Package	Service Encounter	Reliability/ availability	Responsiveness	Assurance	Tangibles
Service Package	Pearson Correlation	1					
	Sig. (2tailed)						
Service Encounter	Pearson Correlation	.713	1				
	Sig. (2tailed)	.000					
Reliability/ availability	Pearson Correlation	.645	.692	1			
	Sig. (2tailed)	.005	.000				
Responsiveness	Pearson Correlation	.624	.508	.627	1		
	Sig. (2tailed)	.000	.000	.000			
Assurance	Pearson Correlation	.746	.686	.593	.709	1	
	Sig. (2tailed)	.000	.000	.000	.000		
Tangibles	Pearson Correlation	.617	.532	.469	.536	.604	1
	Sig. (2tailed)	.000	.002	.002	.003	.000	

Source: Survey data (2014)

The table above indicates the correlation matrix between service package and service encounter, reliability/ availability, responsiveness, assurance and tangibles. According to the table, there is a positive relationship between service package and service encounter of magnitude 0.713, reliability/ availability of magnitude 0.645, responsiveness of magnitude 0.624, assurance of magnitude 0.746 and tangibles of magnitude 0.617 respectively. The positive relationship indicates that there is a correlation between service

package and service encounter, reliability/ availability, responsiveness, assurance and tangibles. This notwithstanding, all the variables were significant (p values < 0.05).

Table 4. 3: Correlation Matrix between capacity management and service quality

		Service Quality	Chase	Level	Coping
Service Quality	Pearson Correlation	1			
	Sig. (2tailed)				
Chase	Pearson Correlation	.785	1		
	Sig. (2tailed)	.001			
Level	Pearson Correlation	.502	.457	1	
	Sig. (2tailed)	.003	.000		
Coping	Pearson Correlation	.694	.518	.526	1
	Sig. (2tailed)	.001	.001	.002	

Source: Survey data (2014)

The findings in Table 4.3 indicate the correlation matrix between service quality and capacity management strategies (chase, level and coping). According to the table, there is a positive relationship between service quality and chase capacity management strategy of magnitude 0.78, level capacity management strategy of magnitude 0.502 and coping capacity management strategy of magnitude 0.694 respectively. The positive relationship indicates that there is a correlation between service quality and capacity management strategies (chase, level and coping). This notwithstanding, all the variables were significant (p values < 0.05).

Table 4. 4: Capacity management strategies means and standard deviation

Chase		Level		Coping	
Mean	SD	Mean	SD	Mean	SD
4.10	0.54	4.40	0.60	4.04	0.62

Source: Survey data (2014)

According to the findings the chase capacity management strategy had an aggregate mean of 4.10, level capacity management strategy had an aggregate mean of 4.40 while coping strategy had an aggregate mean of 4.04.

CHAPTER FIVE: FINDINGS, DISCUSSION AND CONCLUSIONS

5.1 Introduction

This chapter tests the statistical significance of the results presented in chapter 4. Hypotheses are tested, conclusions are drawn, recommendations are given and areas for possible further researches are given.

5.2 Capacity management strategies

The first objective of the study was to establish capacity management strategies of firms in the oil distribution sector in Kenya. From the findings the capacity management strategy mostly employed by the firms in the oil distribution sector in Kenya is chase capacity management strategy where eight (8) firms were using it then coping capacity management strategy where four (4) firms were using it and finally level capacity management strategy where three (3) firms were using the strategy.

To test the null hypothesis that the three capacity management strategies are not normally/naturally distributed chi-square test of expected versus observed was used. The statistics are tested at 95% confidence level.

Table 5. 1: Contingency table

		Level	Coping
Observed	32.782	32.764	32.775
Expected	32.801	32.801	32.801
Sig (E-O)	0.019	0.037	0.026

From the findings the associated P-Value (Asymptotic significance) is 0.019 for chase strategy, 0.037 for level strategy and 0.026 for coping strategy. These values are less than 0.05 (5% level of significance) indicating that there is evidence against the null hypotheses and therefore we reject it. A conclusion can be drawn from the study that “the three capacity management strategies are normally/naturally distributed”.

5.3 Perceived service quality Level

The second objective of the study was to determine perceived service quality level in the oil distribution sector in Kenya. According to the findings, assurance had the highest aggregate mean score of 4.25 followed by reliability which had a mean score of 4.18 then responsiveness with a mean score of 4.06, while tangibility had the least aggregate mean score of 3.99. All the means were above the median value of 3 which indicates they were significantly greater.

5.4 Interaction between Capacity management approach and service context

This study sought to determine if Capacity management approach and service context can interact and have an impact on the perceived service quality. A variable that is the product of Capacity management approach and service context was created and used to test the null hypothesis; the coefficient of the product variable is not significantly greater than zero. Discriminant analysis was used and the results show that the coefficient of the product was 0.0151. As the coefficient of the product is greater than zero, the null hypothesis is rejected (Thiertart, 2001). The alternate hypothesis that the co-efficient of the product variable is significantly greater than zero is accepted. The conclusion made is

that capacity management approach and service context can interact and the interaction positively influences perceived service quality.

5.5 Capacity management and service quality

The final objective of the study was to determine the relationship between capacity management approach and perceived service quality. To test the null hypothesis, a test of the differences between means using the t-test was carried out for each capacity management strategies. A regression analysis was carried out to test the null hypothesis that capacity management approach has no impact on perceived service quality. The regression analysis results gave a p-value of 0.0139 and a beta value of 0.632. The null hypothesis that there is no impact of capacity management strategies on service quality is rejected and the alternative hypothesis that there is an impact of capacity management approach on perceived service quality is accepted because the p-value < 0.05 and the beta value is greater than zero.

5.6 Discussions

The study established that the capacity management strategy mostly employed by the firms in the oil distribution sector in Kenya is chase capacity management strategy. The study also established that that capacity management approach and service context can interact and the interaction positively influences perceived service quality.

The study established that the aspect of perceived service quality that had the highest impact in the oil distribution firms in Kenya is assurance. The study further found out that there is an impact of capacity management approach on perceived service quality. As observed in the literature chase strategy tries to match the capacity levels according to the

changing demand patterns. To actualize the strategy, flexible working hours, different number of staff and often different number of equipment in each period is required. It is suitable for companies which produce either perishable goods or cannot store their outputs such as customer processing. It has a clear advantage of having the appropriate level of staff all the time according to the demand of a particular season (Alp and Tan, 2006).

The findings are in line with Rudberg and West (2008) who state that capacity management has a considerable impact on the quality of the service as perceived by customers. Capacity decisions relates the potential output from the resources available to actual output which depends on service mix, the way capacity is managed and the extent of capacity gaps.

Buxey (2003) argues that since capacity is part of the product, decisions on how much capacity to make available are made at the same time as the decision on how to utilize the capacity. The effect of this is that capacity decisions significantly influence service quality as perceived by the customer.

The result were consistent with prior research by Antonacopoulou and Kandampully (2000) who identify the significance of people in creating and adding value to perceived service quality. They note that the interaction between the front-line employees, who deliver the service, and the customer who experiences the service directly influences service output and is important in determining the perceived quality of the offered service.

Further the findings are consistent with Yang and Fang (2004) who describe technical quality, functional quality, and company image as significant elements to justify the service quality of a service firm. Technical quality refers to what outcomes the consumer receives from a service organization while functional quality refers to how that service is provided. Image creates favorable attitudes to the service providers. Combinations of all three attributes make a positive attitude towards a service organization hence a better service quality. How service firms manage the balance between capacity and demand to satisfy demand and how the service is finally given to the customer is very crucial as firms can have the capacity but have inefficient employees, this will have a negative effect on service quality. Therefore, as capacity management is crucial in service firms' service context is equally crucial and hence a mix of the two will boost service quality.

5.7 Conclusion

The main focus of this study was to determine the impact of capacity management strategies and service quality in petroleum distribution firms in Kenya. The study further found out that there is an impact of capacity management approach on perceived service quality. The type of capacity management approach taken by a firm can have a significant impact on the service quality that the firm will offer its customers. This will be determined by the capability of the firms to meet the capacity needs of the customers. The study therefore concludes that capacity management approach positively and significantly influenced service quality in petroleum distribution firms in Kenya. This is in line with Rudberg and West (2008) who state that capacity management has a considerable impact on the quality of the service as perceived by customers.

5.8 Limitations of the study

A limitation for the purpose of this research was regarded as a factor that was present and contributed to the researcher getting either inadequate information or responses or if otherwise the response given would have been totally different from what the researcher expected. The main limitations of this study were; the size of the sample could have limited confidence in the results and this might limit generalizations to other situations.

Some respondents decided to withhold information which they considered sensitive and classified. This reduced the probability of reaching a more conclusive study. However, conclusions were made with this response rate.

The study looked at oil distribution companies registered in Kenya, with local network operations and have their head offices in Nairobi and their network customers based in Nairobi region. This could limit the generalizations to other regions in the country since the study only focused on Nairobi region.

5.9 Recommendations

Based on the study findings and conclusions, the study recommends that petroleum distribution firms should employ effective capacity management strategies to ensure that they meet the customers demand. The firms can have flexible strategies that allow them to reduce and increase capacity in relation to demand.

The study also recommends that the petroleum distribution firms should invest more in market research where they should work with experts to come up with expected demand

charts in their stations to curb problems of shortages in some stations while there is surplus in others. this will ensure that they serve their customers better hence better service quality.

The study also recommends that the petroleum distribution firms in Kenya should ensure they have competent workforce that can serve and respond to clients' needs effectively. This will ensure that there is customer satisfaction which will boost service quality in the firms bringing in more customers.

Another recommendation is that the petroleum distribution firms in Kenya should invest in employee training. The employees should be trained on how to handle and respond to clients need. The employees are an important aspect in service delivery since without them the service cannot be offered, thus their training comes as an excellent plus on the service quality.

Finally, the study recommends that the petroleum distribution firms in Kenya should ensure that they communicate regularly with the customers on any changes in their operations, prices, products among others. This information is vital to ensure that the customers can be up to date with the costs and new products and services being offered by the firms.

This study focused on the on the relationship between capacity management strategies and perceived service quality in the oil distribution sector in Kenya. A similar study can be undertaken in other sectors, for example, banking, insurance, construction among others. Another study can be done on the challenges of capacity management strategies and financial performance of petroleum distribution firms in Kenya.

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APPENDICES

Appendix I: Managers' Questionnaire

You have experience and knowledge that would be helpful in establishing the strategies used for managing capacity in petroleum distribution and how they impact on service quality. The outcome of this study is expected to inform the documentation of capacity strategies appropriate for the petroleum distribution sector in future. Kindly spare a few minutes of your valuable time to answer the questions below. The study is intended for academic purposes only. The information given will be treated with utmost confidentiality and the results will be analyzed and reported in summary .You will not be required to give your name or any form of personal identification.

Questionnaire Reference no:.....

- 1) When making plans for your products capacity, which between each of the following pairs is most talked about.**

Fixed capacity for our operations <input type="checkbox"/>	We change as demand changes <input type="checkbox"/>
Fixed capacity for our operations <input type="checkbox"/>	Reviewed at periodical intervals <input type="checkbox"/>
We change as demand changes <input type="checkbox"/>	Reviewed at periodical intervals <input type="checkbox"/>

- 2) Please indicate to what extent your company uses the following strategies to match customer demand.**

	Extremely often.	Very often	Moderately often	Slightly often.	Not at all often
Flexible workforce					
Variable shifts or scheduled working					

hours					
Part time or contracted employees					
Sharing capacity with other oil marketers e.g. storage					
Use of outsourced capacity e.g. staff					
Transferring resources to where they are really needed e.g. depot to depot transfer of stocks					
Other (specify					

3) Please indicate how you would rate the performance of your organization in the following people aspects and events.

	Very poor	Poor	Fair	Good	Excellent
Employees are able and willing to create new solutions to meet customer needs when inevitable system failures occur.					
Employees are empowered to adapt the service delivery system to suit customers with unique needs in context of the organization's cultural norms					
Employees are trained to handle unreasonable demands /demands against policies from customers.					

Thank you very much for your cooperation and for filing this questionnaire

Appendix II: Customers’ Questionnaire

You have experience and knowledge that would be helpful in establishing the strategies used for managing capacity in petroleum distribution and how they impact on service quality. The outcome of this study is expected to inform the documentation of capacity strategies appropriate for the petroleum distribution sector in future. Kindly spare a few minutes of your valuable time to answer the questions below. The study is intended for academic purposes only. The information given will be treated with utmost confidentiality and the results will be analyzed and reported in summary .You will not be required to give your name or any form of personal identification.

Questionnaire Reference no:.....

1) For each of the following statements, please indicate how you would rate the oil firm from which you purchase your petroleum products.

	Very poor	Poor	Fair	Good	Excellent
Ability to provide services as promised					
Dependability in handling customer’s problems					
Performing services right the first time					
Providing services at the promised time					
Maintaining error free records					
Informing client when services will be performed					
Prompt service to customers					
Willingness by staff to help customers					
Readiness of staff to respond to customers requests					
Understand exactly what each customer needs					
Communicating regularly with the customer					
Confidence instilled in customers by staff					
Making customers feel safe in transactions					
Courtesy of staff to customers					

Staff technical knowledge to answer customer questions					
Ability to perform the promised service dependably and accurately (credibility)					
Individualized attention to customers by staff					
Employees who deal with customers in a caring fashion					
Customers' best interest at heart by staff					
Staff understanding of customer needs					
Convenience of office business hours					
A composite of understanding and access					
Modernity of the office equipment					
Visual appeal of the office facilities					
Neatness and professionalism of staff in appearance					
Appeal of serviced equipment Appearance of physical facilities, equipment, personnel, and communication material, location, access. appearance of equipment, physical facilities, and personnel					

2) Please indicate how you would rate your level of satisfaction/dissatisfaction during service delivery process in the following circumstances

	Not at all satisfied	Slightly satisfied	Somewhat satisfied	Very satisfied	Extremely satisfied
Normal/expected service is not available or is slow due to inevitable system failures.					
Response to customer with special requests/preferences outside the standard company					

procedure					
Response to admitted customer error in the delivery process e.g. error in ordering					
Attention paid to customer by employees' when delivering the service					
Truly out of the ordinary employee behavior employee behavior in context of the cultural norms					
Employees performance under adverse circumstances e.g while under pressure to large number of customers at the counter.					

3) Please indicate how Frequently you purchase petroleum products

Daily Weekly Fortnightly Monthly

4) Please tick the box indicating on average the amount of purchase you make each time you order.

Less than 5,000litres 5000-10000litres above 10000 litres

Thank you very much for your cooperation and for filing this questionnaire