INVESTIGATION OF CAPACITY MANAGEMENT STRATEGIES AND THEIR INFLUENCE ON SERVICE QUALITY: CASE OF NAIROBI SUPERMARKETS

BY

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DECLARATION

This project is my original work and has not been submitted for a degree in any other university.

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DEDICATION

The project is dedicated to my mother Mrs. Jane A. Samba for the great moral support and word of encouragement towards my education, Brother Brian for being there for me for assistance during my education period and grandmother Anjeline Owino for words of wisdom and prayers.

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ABSTRACT

This study sought to determine capacity management strategies and their influence on service quality and the challenges in capacity management faced in Nairobi Supermarkets. The study was conducted using a descriptive survey design. It was based on the 50 supermarkets in Nairobi. Primary data was collected using self-administered drop and pick questionnaires. The questionnaires were semi-structured having both open-ended and closed questions. A content analysis and descriptive analysis was used to analyze the data. The study ascertained that the main method of contributing to achieving expansion objectives of supermarkets is price discounting. Moreover, the methods for achieving expansion objectives had been fairly useful on the return on investments and profitability, customer satisfaction, process time, response time and market shares. The strategies used to operationalize supermarket capacity requirements were; scheduling activities, a flexible workforce, remodeling of equipments and business process reengineering. Remodeling equipment majorly led to service flexibility and service time while scheduling of activities helped in achieving service flexibility and response time while flexible workforce was useful in achieving response time and service time. The usefulness of storage facility was evident in increased sales and increased customers.

The study established that strategies such as benchmark, involving employees when introducing capacity changes and involving customers and other stake holders were rarely involved during capacity changes in supermarkets. On the contrary, ignoring change and maintaining status quo as a strategy was rarely or never involved. Capacity strategies such as remodeling equipments majorly led to customer safety, variable shift responded to quick clearance, subcontracting led to reduced complains and continuous service, whereas flexible workforce helped in meeting service time. However, business process reengineering strategy did not quite effective respond to customer needs, other than enhancing continuous service. The study established that there were two main challenges that supermarkets faced during capacity management initiatives; bottlenecks and inadequate finances. The only action that supermarkets took to solve problems or challenges of bottleneck in operation was making corrections appropriate to the problem.

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CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter introduces the background of the study by introducing capacity management, and service quality, the statement of problem, importance of the study, research questions and provides definitions of supermarkets and their history.

1.1 Background of the study

Operations managers use capacity management to minimize the trade-off between resource productivity and quality. Quality and resource productivity are important in the strategy context as they impinge on the ability of service organization to attain competitive strategy described by a combination of perceived added value by customer and price (Bowman 1990). Service quality and customer satisfaction is aligned to perceived added value for the customer and resource productivity and unit cost affect price and profitability.

The emphasis towards either service quality or efficiency will to large extent be driven by the competition of the service organization. If competitive advantage is gained through service quality at a high price compared to competitors there will be more latitude in the trade off resource productivity in this pursuit and hence a tendency to indulge in capacity redundancy times. Armistead (1990) noted that many service organizations are no longer gaining clear competitive advantage from the provision of certain levels of quality as these are now regarded as norm for the industry to which all providers in a competitive group must aspire. This in turn requires an understanding of the capability of a given level of capacity to deliver different dimensions of quality, by ensuring that capacity is provided to support the critical dimensions of service quality.

Poor service providers are likely to be often out of control of their capacity and either fail to satisfy demand or maintain excessive inefficiencies. Good service providers will struggle to deal with the two extremes of when a chase strategy runs out of capacity and become level and when demand drops away from effective capacity so that resource productivity drops. An indication of the change in demand and the consequential problems comes from a survey aimed at understanding the management of productivity in services (Armistead 1991).

Purchasing function has been emphasized in the industrial and institutional sector, notwithstanding its growing importance in the retailing industry. Supermarkets just as industrial and institutional buyers spend large sums of money on acquisition of merchandise and are recognized due to their potential contribution to profitability through cutting costs, (Lysons, 1996). Supermarkets in Kenya have made efforts to enhance the ultimate customer satisfaction by providing different types of merchandise from different manufacturers' variety and assortment (Randall 1994).

The most important thing is that if a supermarket focuses its efforts on better management of its capacity, it can increase its available or existing capacity, through improved quality of its products and lower costs without a high capital investment. Product costing, based on optimal capacity utilization, provides realistic yet competitive cost which in a highly competitive environment like in Kenya, is a competitive advantage. Therefore, capacity management in supermarkets can be justified from an efficiency perspective. Idle capacity and non productive capacity creates costs that distort product cost and leads to inefficiency of the supermarket, Randiki (2000).

1.1.1 Capacity Management

Lovelock (1992) noted capacity of 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 defines the firm's competitive boundaries, specifically , the firm's response rate to the market, its cost structure, work force composition, level of technology, management and staff support requirements, and its general inventory strategy. If capacity is inadequate a service firm will lose customers or altogether lose its competitive advantage. If capacity is excessive, a company may have to reduce its prices

to stimulate demand, underutilize its workforce, carry excess inventory or seek less productive services to stay in business, Ochieng (2006).
According to Armistead and Clark (1994), Capacity management is the process of planning, analyzing, and optimizing capacity to satisfy demand in a timely manner and at reasonable cost. Armistead and Clark (1994) observed capacity management as process with broad scope that brings together business, service, and resource capacity needs to ensure optimal use of resources to achieve the required levels of performance. In this regard the manner in which capacity is managed is influenced by objectives which determine what must be achieved by an operating system structure, which influences what is feasible, Ochieng (2006)

Capacity management, therefore, is the most critical and strategic decision area of operations incorporating decisions on how to balance demand and the capability of service delivery system to satisfy demand. A service firm's success or failure like the supermarkets in the process of balancing service quality and resource management, expressed in terms of resource productivity, depends on its skill in managing capacity to match demand (Armistead and Clark, 1991). For this study capacity management will be considered in terms of optimal use of available resources, which consist of facilities, operating systems and human labor in achieving required level of results by ensuring customer satisfaction of the quality of service offered.

1.1.2 Service Quality

Service quality is a concept that has aroused 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). It has been identified as the single most researched area in service marketing to date and it is maintained that, for service- based companies, quality is lifeblood that brings patronage, competitive advantage and long term profitability (Oldfeild and Baron, 2000).

Zeithaml and Bitner (1985) describe quality as the ability of an organization to meet or exceed customer expectation. Lovelock (1996) asserts that service quality is one of the powerful tools that companies can use to gain competitive advantage. Pride and Ferrell (2003) describe service quality as the customers' perception of how well a service meets or exceeds their expectations Since service quality may be the only way that customers can choose one service over another, service marketers must understand how customers judge quality, Kibor (2008).

Combrink (2006), states service industries are playing an increasingly important role in the economy of many nations Supermarkets being one of them in today's world of global competition, rendering quality service are a key for success, and many experts concur that the most powerful competitive trend currently shaping marketing and business strategy is service quality (Abdullah, 2005). Service quality focus has now shifted from traditional service industries such as health care to include manufacturing and technology industries such as automobiles and computers. Customers have become more sophisticated due to availability of information and a wide range of product to choose. They have created their own perception of the level of quality expected. They demand high – quality goods as well as high levels of service quality.

Combrinck (2006) notes judgments about service are often subjective rather than objective and providing a consistent service is difficult. The service quality of a firm is tested at each service encounter. Past experiences, word of mouth and advertising inform customers' service expectations. Service quality has been normally linked to varied performance metrics, such as customer satisfaction, loyalty, price insensitivity, sales growth and market share (Bell et al. 2005). According to Brandy and Cronin (2003) service quality is a critical element of customer perception which includes interaction quality, physical environment quality and outcome quality as elements of service quality. From the above arguments it's clear that service quality depends on other factors for it to be achieved and capacity management is one of the supporting factors for effective service provision. Therefore, for this study the research will concentrate more on service quality as customers' perception of how well a service meets or exceeds their expectations and the contribution of capacity management to efficient service quality.

1.1.3 Background of Nairobi Supermarkets

According to Ngatia (2000), there is no precise definition of what a supermarket is. This conclusion by Ngatia and many others can be attributed to the existence of the several supermarkets definitions. Kibera and Waruinge (1997), observed a supermarket as a large retailing institution with several departments and operating primarily on a self – service basis. Pickering (1996) noted a supermarket as a store with 2000 square feet sale area, with three or more checkout and operated mainly on a self – service basis. According to Barker et al, (1956), supermarkets are basically grocery stores but usually have departments selling non – food items, and the grocery department is operating on a self – service basis.

The history of supermarkets in Kenya dates back to 1960s, according to Ngatia (2000) and Kipkorir (1995). The first supermarkets to be established in Kenya were the Westlands General Stores (1960), K&A (1962), Ebrahims (1970), and Uchumi (1975). These supermarkets started as a self – service stores, covering small trading areas. They have increased their volume and assortment of merchandise as well as trading Kipkorir (1995).According to Ngatia (2000), liberalization in early 1990s has seen growth of supermarkets in Kenya and especially in Nairobi and other major towns. Uchumi supermarket as one of the pioneer supermarket in Nairobi enjoyed business during that time which enabled it to expand and open up more outlets within Nairobi and other towns. Over the period a number of supermarkets came up such as Ukwala, Tusker mattresses (now Tuskys), Jack and Jill, Nakumatt, Woolmart, Tesco and many others now spread throughout the country with majority totaling to 191 in Nairobi according to House of Manji (2011), the CBD alone having more than 30 supermarkets.

According to research conducted by Neven and Readorn (2005), it was found that between 1993 and 2003, supermarkets in Kenya grew in numbers by a rate of 18 percent per year. They also found that supermarkets spread from the Nairobi to intermediate and small towns, with 44 percent of supermarkets sales and 58 percent of supermarket stores located outside Nairobi by 2003.Neven and Readorn (2005), observed this rapid growth of supermarkets in Kenya is a new phenomenon which took off since the mid -1990s.

They observed this growth was driven by three main factors. First, they observed the urbanization growth in Kenya to be very rapid. The urban population grew by 36 percent between 1975 and 2000. The urban population is observed to be growing at a rate of 4.7 percent and is expected to surpass the rural population by 2013. These factors as they observed contributed to increased consumer's dependency on supermarket services. Some attributes associated with urban lifestyle go hand in hand to elicit this effect, popularizing the supermarkets over other related sectors.

The increase of population in Nairobi as observed by Neven and Readorn (2005), has led to a capacity challenge in supermarkets in that customer demands are always changing and competition is high, this situation has led the operations managers in this supermarkets to come up with strategies on how to manage their capacity to remain in service business, Ochieng (2006). The study will therefore concentrate in Nairobi because of the wide number it has compared to other towns in Kenya and in the case of this study a supermarket is considered a departmentalized self – service store offering a wide variety of food and house hold merchandise, large in size and has wide selection than a grocery store, kiosk or shop, it occupies a large floor space either on a single level or an entire building with multiple levels.

1.2 Statement of the Problem

Capacity Management problems are caused by among others, uncertainty of demand often caused by uncertainty of orders and resources required to satisfy these orders. This is so in the supermarkets in Nairobi, where business depends on the presence of customers as service is offered (Murdick *et al*, 1990) and strong seasonality in demand (Slack *et al*, 2001).The increased competition among supermarkets and the changing environment and other factors surrounding them certainly calls for their individual prowess and tact to ensure their sustainability and survival. Bore (2007) on his study response strategies of supermarkets in Nairobi to competition, found out that strategies developed by supermarkets, should reflect, accommodate as well as necessitate changes associated with increasing population and urban growth, changing lifestyle and all their dynamics, diversities and demands.

Sailewu (2001) tried to bridge the gap between perceptions of service quality by supermarkets in relation to E- marketing but did not discuss capacity management related issues his findings were that supermarkets perceive e- marketing positively though they perceive the technology requires heavy capital investments. Ochieng (2006), on his study of capacity management strategies on Kenya Airways observed problems in managing capacity in service sector but did not capture its influence on service quality.

Masese (2001) conducted a study on the factors considered important by large supermarkets in selecting their suppliers of merchandise. The findings of the study showed that financial stability, technology, aggressive advertising and merchandise suitability were some of the consideration. All this studies did not focus on the influence of capacity management on service quality of Nairobi supermarkets.
Given the need for these supermarkets to offer effective service there is need to adopt effective capacity management strategies and establish the challenge they face during capacity management initiatives. It's however not known as to which factors influence capacity utilization decisions by these supermarkets. The proposed study intends to fill the gap by determining capacity management strategies applied by the supermarkets and their influence on service quality. Secondly the challenges faced during capacity management initiatives.

1.3 Objective of the study

The purpose of this study was:-

1. To determine capacity management strategies and their influence on service quality in Nairobi Supermarkets.
2. To establish challenges in capacity management faced by Nairobi supermarkets.

1.4 Value of the study

Capacity management remains critical area in research, considering that little research work has been done in capacity management in the supermarkets and service industry.

The study is important as a catalyst to explore the area further, by also looking for other area such as manufacturing firms. It will also facilitate the conduct of other studies that requires the results of their study on their information. Students and academician who wish to carry further research in creating sustainable competitive advantage in service organizations using capacity strategies and influence on customer perception of service quality will greatly benefit from this study.

Policy makers in the supermarkets including the operations managers will use the information of the study to come up with informed decisions on the changes needed to enhance their capacity to offer quality services to the customer. While the government will use the findings of this study to learn and investigate if there is any violation, of government regulation concerning capacity issues and enhance measures on how to monitor capacity improvement plans used in supermarkets.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter presents literature on capacity management, how it's applied in service industry, the problems faced during capacity management decisions and how it influences service quality. The chapter also brings out what other authors have done before, available gaps for further research and their findings and lessons learned. Kenyan component is drawn from a few books, the regional and national news publications, and studies on capacity management that has been conducted by other MBA students of the University of Nairobi.

2.1 Capacity Management

Armistead and Clark (1994) noted capacity management as a process of planning, analyzing, sizing and optimizing capacity to satisfy demand in a timely manner and at a reasonable cost. They also observed capacity management as a process with a broad scope that brings together business, service and resource capacity needs to ensure optimal use of the resource to achieve the required level of performance.

Capacity management, therefore, is the most critical and strategic decisions area of operations incorporating decisions on how to balance demand and the capability of the service delivery system to satisfy demand. According to Armistead and Clark (1991), a service firm's success or failure in the process of balancing quality of service and resource management, expressed in terms of resource productivity, depends on its skill in managing capacity to match demand.

Van Looy *et al.* (1998) observed that in order to satisfy demand, service load, and capacity task management and capacity leakage are very significant. In addition, the relationship of service capacity levels, quality levels and methods of resource management should increase capacity. How much to increase capacity depends on the volume and certainty of anticipated demand, customer service, competition and cost of expansion. Lovelock (1992) noted that a system has a capacity if it has at least some of each of the resource which is needed to perform its function. (Adenso- Diaz, *et al*, 2002) observed that the aim of capacity management is to minimize customer waiting time and avoid idle capacity, with the goal of attending to demand in time and in the most efficient way possible.

2.2 Capacity Management in service Industry

Ng, *et al.* (2001) noted that service firms seek growth of their business units, in their overall market and in their respective market share. This is because the greater the market share in terms of volumes, the greater the profit for the organization. However, difficulties in increasing capacity bring about costs and overstretching present equipment and labour leading to other problem. At the same time insufficient capacity can result in turning down orders which could lead to customer dissatisfaction and the reality of declining demand.

According to Klassen and Rohleder (2002), most service industries integrate business growth and capacity planning for their own long term health by attempting to match capacity levels with their expected demands. Dilworth (1992) and Nahamias (2001) noted the need for an optimum choice of capacity that may be a close fit to demand profile by using forecasting models to arrest seasonal demands problems. In practice, imbalances are managed by managing supply for a fixed demand or fixed supply. Karmarker (1996), stress the importance of concurrently evaluating capacity in service and demand strategies.

2.2.1 Capacity Management Challenges in Service Industry

Managing capacity in most customer service operations is particularly difficult because output cannot be stored, Brady (2003). The challenge is to ensure that resources are utilized as efficiently as possible to ensure that as many customers are satisfied.
Operations managers in service industry will want to maximize income from customers however, they will also want to minimize the operation's capacity cushion, which

becomes a costly wasted resource when not being fully utilized to serve customers (Kines, 1989).

According to Ng, *et al* (2001) capacity planning would be easier, however, many complications are brought about by insufficient flexibility to change service process as a means of adjusting capacity in order to match demand and strong seasonality in demand. (Murdick et al, 1990), observed that further complication is caused by the customer defining personal service specifications, often when the service is offered, and perishability of service, in that each day a service is not profitably used, cannot be saved. Performance is further complicated by experience specifically when introducing new processes or equipment. One way would be to increase the number of service in parallel with increasing the number of service outlets. This brings a challenge on service quality and effects on economies of scale, economies of scope and diseconomies of scale.

Fitzgerald *et al*, (1991) noted that capacity at a given site increases, there will be economies of scale. However, adding sites to a service firm will produce limited economies of scale. This is due to fixed cost being distributed over a greater volume. Diseconomies of scale are experienced as service firm acquires too many sites and the complexity becomes unmanageable. While economies of scope in multi service firms is experienced in relation to offering service at a single site. Van Looy et al, (1998) observed capacity management problems emerging from the manner in which forecasting, prioritizing, alternating bottle – necks, scheduling, and capacity and coping strategies are used. Rhyme, (1988) noted capacity management has a considerable impact on the quality of the service perceived by customers.

2.2.2 Identification of Effective Capacity

According to Stevenson (2002) to determine effective capacity, the need is to maximize possible output, given product mix, scheduling difficulties, quality and machine maintenance among others. The relevant factors that identify effective capacity are the size and the provision for expansion for existing operating facilities, the ability of the operating system to produce similar product or service while maintaining required quality standards. To allow efficient and satisfactory service delivery to the customer, factors such as appropriate scheduling and acceptable stock level will be maintained to avoid delayed deliveries while ensuring satisfactory after service support, quality control measures and inspections, Ochieng' (2006).

Armistead and Clark (1991) see inadequate planning as a major limiting determinant to effective planning and suggest the need to balance a firm's operating capacity as one way of solving this problem. According to them operation is an internally homogeneous and made up of micro operations. Ochieng' (2006) observed many organizations operates below maximum processing capacity, either because of an insufficient demand to completely fill the capacity, or respond quickly to every new order.

Often, organizations have some parts of their operations below capacity while others at their capacity 'ceiling'. It's the capacity ceiling that causes constraint leading to bottle necks for the whole operation. The parts must be improved to ease the bottle neck that constraint the operating system (Armistead and Clark 1991).

In all situations, it is a good practice to increasingly know when the limits to matching demand and effective capacity are being reached, and timely action taken, to do this a firm needs continuous management of capacity to match demand. This shows the importance of capacity management in operations management and why its success or failure to attain effective service quality in a perceived added value (Armistead and Clark 1991).

2.2.3 Capacity Improvement Plans

According to Meredith (1992), capacity improvement include increasing resource by use of overtime, adding shifts, part – time or outsourced workers, staggering shifts, appointment programming, stock accumulating, queuing demand, marketing and promotions, modifying products and varying of prices, and not satisfying full demand without supplying entire demand.

Capacity improvement can also be through cross –training employees to perform more than one task. This creates flexibility that meets peak demand, while an increase in customer participation in service process increases capacity reducing demands and enhances quality service. An example is the use of self –service and capacity sharing. Teller sharing in supermarkets is such useful strategy used to ease customers demand (Gabszewic & Michel, 1991).

According to Sasser (1976), the need to manage difficulties that may arise by attempting to synchronize supply and demand, failing to synchronize would result to loss of opportunity to attend to other customers when demand is higher leading to incurrence of loses and increase operational costs due to lost income when there is reduction in demand due to unused capacity.

(Adenso- Diaz, *et al*, 2002), noted level strategy is applicable when demand is more visible before the time of use and the firm effectively inform the customers to wait when the increased demand cannot be satisfied, implying the customers are willing to wait for the service. According to (Slack *et al*, 2001), these are mixture of three 'pure' strategies which may be used only where the advantages strongly outweigh the disadvantages. Many firms 'pure' approaches do not match their combined competitive and operational objective to simultaneously reduce cost and inventory, minimize capital investments and provide a responsive and customer oriented approach all the time, therefore most firms follow a mixture of the three approaches.

Chase demand is applied more in situations where the customer is not willing to wait longer for the service, there is also the need to get the process started and taken to a reasonable stage for the customer to feel satisfied.

The plan is difficult to achieve because different number of staff, different working hours and equipment used may be necessary in each period. Apure chase demand plan is normally applied by operations which cannot store their output such as customer-processing operations and provision of perishable products. Chased demand avoids wasteful provision of excess staff that occurs with a level capacity plan. It requires adjustment of capacity by means of overtime and idle time, varying workforce size, employing part-time staff and sub-contracting (Sasser, 1976)

According to Armistead and Clark (1991), coping strategy is appropriate for those circumstances characterized as being busy or being slack while capacity is balanced with demand. Coping improves on chase and level strategies by enhancing forecasting capabilities, setting clear service quality targets, resource productivity targets, learning critical and hygiene dimensions of service quality, possible bottlenecks and failure points in service provision systems (Armistead and Clark, 1991).
(Slack *et al* (2001) noted that increasing operations capacity brings benefits, but also has greater costs and implications.

The disadvantage of having excessive capacity in a firm can force the firm to reduce the prices of the service to stimulate demand, underutilize its work force and bring on board less profitable products to remain in business. Service organizations should therefore, integrate business growth and capacity planning for it long –term growth and sustainability. Maximizing of capacity, leads to maximum output which is achieved when productive resources are used to their maximum, because utilization of resources may be inefficient. Therefore, it's important to give consideration to operation's best operating levels reason being the percentage of capacity utilization minimizes the average unit cost.

2.2.4 Capacity Expansion Techniques in Service industry

Sasser *et al.* (1982) noted that capacity expansion requires addition of equipments or personnel at the site, duplication of existing service station in additional locations, or adding of new service stations at new locations, or a combination of both to meet growing demand for the required service. Capacity management issues can therefore be seen to be revolving around additional of equipments and personnel into a cramped facility and this affects service delivery and quality. Therefore the need of a flexible plant, process, dynamic workforce or adjustment for capacity additions versus external source of capacity, whether should be done at a single location or multiple locations.

Before deciding on which capacity plan to adopt during capacity management, firms must be aware of the consequences of each plan given the circumstances and considerations of set- up time, culture, economies and scope, and demand Meredith, (1992). Operations managers have a duty to understand the composition of their capacity, the degree of which adjustment can be made or changed, speed of reaction (Slack et al, 2001) and the cost involved (Heskett *et al.*, 1990).Expansion strategies will therefore depend on whether the service firm is at its growth stage or maturity. The commonly used strategies in single – location firm with high demand, will include shifting of resources from one location to where they are needed, this will require cross-trained personnel to fill various positions or stations when required. Cross-trained employees will cover for each other when services increases and schedule fewer staff than a firm that has no cross-trained staff (Klassen and Rohleder, 2002).

Klassen and Rohleder (2002), also noted having higher level of staff is always better than lower level which may result in overtime or long waits for customers, requiring hiring of extra people or outsourcing of extra equipment or space that may result into idle time or excess capacity. Some services always maintain some idle capacity in order to establish and maintain service quality and a firm's differentiation efforts (Bassett, 1992) such services unavailability or waiting for the service is invariably bad service, and requires setting capacity utilization low to provide instant service, or a level at which the service is competitive and satisfactory to the industry standards. According to Muhlemann (1997), excess capacity is deliberately maintained during peak hours, while insufficient capacity can result in turning down orders leading to customer dissatisfaction and poor service quality.

2.3 Capacity Management in Supermarkets

According to Voneche (2000), capacity adjustments of services cannot be made in short run but requires to be built into the facilities to meet peak period demand. It's from this analysis that Armistead & Clark (1991) stressed on the importance of balancing capacity of various micro-units of an operation system. An example is a supermarket can continue serving the customers as it works on various capacity adjustments within the facility. Depending on the nature of demand, different sections of an operation in the supermarket might be pushed to their capacity ceiling and constrain total operations. Extra resources will, therefore, be required to increase capacity of micro operation, this could constraint the capacity. It is for these reasons that it's important to balance capacity at various stages of the process to avoid bottlenecks that may cause complain from the customers.

To avoid the bottlenecks a supermarket may decide to change its capacity with the concern on the amount, timing and capacity additions. This is because it is easy to add wrong capacity with big investment. For example, to increase customer's service rate, a supermarket management may decide to open a new branch near the same location, where competitors use the available space to add new service stations within the facility. While capacity may be the same in term of service stations, the service rate per station per day may provide better customer service flexibility and satisfaction (Voneche, 2000).

2.3.1 Supermarkets Capacity Adjustments Approaches.

Capacity planning is significant as it determines the daily schedule that will offer the best chance of capturing maximum demand in each market served by the supermarkets Smith (2001). Capacity adjustments can be through the following decisions;

Price discounting is the process of lowering product prices in order to attract or retain more customers than the other competitors. This is normally used by most supermarkets during low period's sales (Stone, 1990) and prices are adjusted through promotions depending on demand for a particular type of service or product (Ng, *et al.*, 2001).

Automation is through Smart cards, used for payments (Heskett, 1997), which is one of the most recently used approaches taking over to speed service quality by using computes which take less time cash customers bills. The customer is able to pay the bills without exchange of cash and is also able to place orders directly online without having to travel to the supermarket for deliveries.

Capturing unused capacity is concerned with expanded capacity to capture the attention of new customers, or develop new channels of distributions. An example is when a supermarket uses an outside space to develop little outlets stalls for quick sales for those customers attending to other businesses and is not willing to enter the supermarket (Voneche, 2000).

Flexible workforce has also emerged as one of cost cutting initiatives being applied for capacity adjustments and the need for flexibility have changed human resources' mindset. Supermarkets have shifted to employing staff that can perform various duties rather than concentration on one duty as the only specialization. The service organizations require those who can perform more than one job (Masese, 2001).

2.4 Service Quality

According to Pride and Ferrell (2003) service quality refers to customer's perception of how well a service meets or exceeds their expectations.
Service quality is judged by customers and may be the only way that they choose one service over another. Service marketers examine quality from the customer's views and ensure that they understand how customers judge quality. Parasuraman *et.al* (1985) noted quality is exceeding what customers expect from the service. Quality is the totality of features and characteristics of a product or service bears on its ability to satisfy stated or implied needs. They identified reliability, assurance, responsiveness, empathy and tangibles as five specific dimensions of service quality that cuts across a variety of service contexts.

Brady and Cronin (2003) noted that service quality as a focused evaluation that shows the customers perceptions of the elements of a service. They identify interaction quality, physical environment quality and outcome quality as elements of service quality. Service quality is one of the first stop before implementing a quality improvement program involves establishing which components of service influence the customer's perceptions of quality. Since the service delivered must match customers' expectations on a consistent basis (Lewis and Booms, 1983).

Maina (2003) asserted that only customer can judge the quality of service. Service quality therefore can be viewed in levels depending on how well it meets the expectations of customers. According to Barron and Harris (2003) service quality has to be defined by customers. Heineken (1998) observed that service quality is most often related to customers' perceptions and satisfaction. She defines service quality as the difference between customer's expectations of a service and his/her perception of service performance. Rendering service quality is key for success in the global competition.
Abdullah (2005) asserts that service quality is the most competitive trend currently shaping marketing and business strategy. It linked to increased profitability and provides competitive advantage.

Kotler (2003) noted that delivery of superior service by companies translates to superior profitability. A service firm can differentiate itself by delivering consistently higher quality than that of its competitors. Service providers need to identify the expectation of targeted customers concerning service quality. He adds that services are generally high in experience and credence qualities that lead to several consequences.
Firstly, service consumers generally rely heavily on word of mouth rather than advertising. They also rely heavily price, personnel and physical cues to judge quality and lastly, they are loyal to service providers which satisfy them.

Parasuraman et al (1985) discovered ten service quality decisions which were apparent regardless of the type of the service. The type of services quality dimensions proposed by Parasuraman will be used because there is a general agreement on completeness and relevance of the ten original service quality dimensions. Reliability: Consistency of performance and dependability, e.g. performance of the service at the designated time. Responsiveness: Willingness or readiness of employee to provide the service e.g. giving prompt service. Competence: Possession of the required skills and knowledge to perform the services involving contact the services organization. Access: Approachability and accessible. Communication: Keeping customers to them. Credibility: Trustworthiness, believability and honesty and having the customers best friendliness of contact people and consideration. Security: Freedom from danger, risks and doubt, and involves physical and financial security and confidentiality. Understanding: Making the effort to understand the customers' needs e.g. providing individual attention. Tangibles: The physical evidence of the service e.g. physical facilities.

2.5 Model for Service Quality

(Parasuraman et al 1985) to evaluate the quality of service, customers will compare the services they received with the service they expected. If service quality were to be calculated mathematically the formula would be P-E with P being the customers' perception level of services received and E being the customer expectations prior to the service encounter (Parasuraman et al 1985). The model below identified the services gaps that can arise.

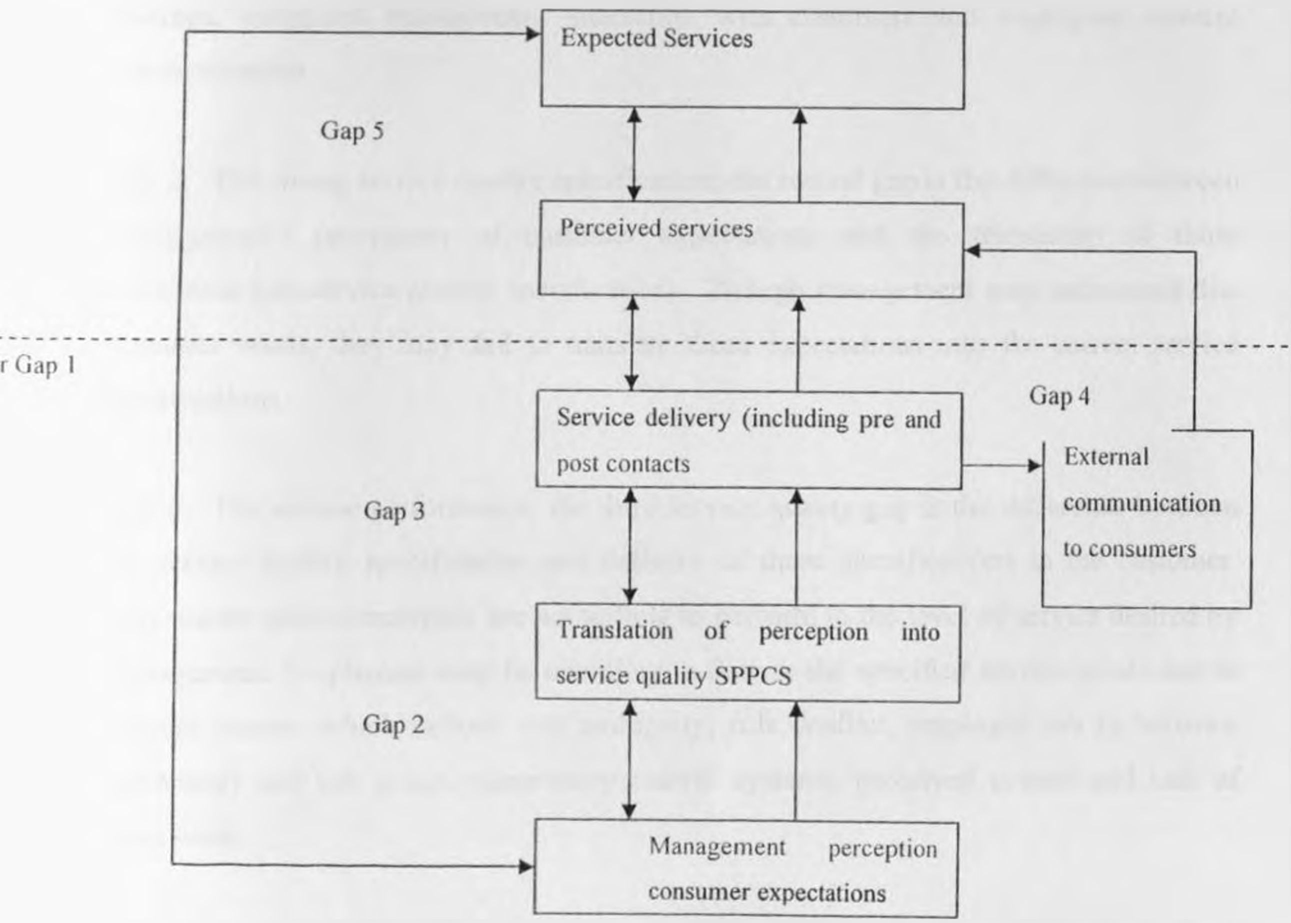


Figure 2.1 Model for service quality

Source: "A conceptual model of service for quality service and its implications for future" A Parasuraman Valarie. A Zeithaml, and Leonard L. Berry, Journal of Marketing vol. 49 (Fall 1985) p. 44

(Parasuraman et al 1985) gap 1 Not knowing what the customers expect; is the difference between what customers expected and what management perceived customers expected. The reverse of this can also be expected when management can provide a service that they think customers expect when customers did not expect it. Though the management may have abroad understanding of customer's perception of superior quality, they may not know about certain service feature that are critical I meeting customers desires. Secondly they may not know the levels of performance customers expect. This gap arises due to various reasons, which include lack of market research findings, infrequent management interaction with customers and inadequate upward communication.

Gap 2. The wrong service quality specification; the second gap is the difference between management's perception of customer expectations and the translation of those perception into service quality specifications. Though management may understand that customer wants, they may fail to translate these expectations into the correct service specifications.

Gap 3. The service performance; the third service quality gap is the difference between the service quality specification and delivery of those specifications to the customer. This occurs when employees are not willing to perform to the level of service desired by management. Employees may be unwilling to deliver the specified service levels due to various reasons which include role ambiguity, role conflict, employee job fit between technology and job group, supervisory control systems, perceived control and lack of team work.

Gap 4. When promises do not match delivery; the forth gap is the difference between the service delivered to customers and external communications about the service. This gap is created as a result of advertising: personal selling or public relations messages that over represent or over promise the service levels. Another cause of indicator of Gap 4 is inadequate horizontal communication within and across departments (Parasuraman et al 1985).

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

In this chapter the research design, population of study, sampling plans, data collection, and data analysis techniques are presented.

3.1 Research Design

The study used survey methodology and was modeled on a descriptive design. According to Knupfer et.al (2003), a study concerned with when, how, who of a phenomenon is a descriptive study. The proposed study was concerned with the influence of capacity management on service quality in Nairobi supermarkets, which fits a descriptive design. Studies on service quality by Maina (2001) and Gitobu (2006) used descriptive design successfully.

3.2 Population & Sampling

The population of interest in this study was all the supermarkets in Nairobi. The study was conducted in Nairobi because most of the Supermarkets in Kenya are located in Nairobi. According to Davidson (2005), several supermarkets have been established in Nairobi and other towns in recent years. The list obtained from Manji data base as at April 2011, showed that there are 191 supermarkets in Nairobi. These are subdivided into three categories based on the sales volume shown in Appendix III. Studies on supermarkets by Munyoki (1997), Masese (2001) and Bore (2007) also adopted the House of Manji data base classification.

Table 3.1 Stratification of Supermarkets in Nairobi according to size

Size	Number of supermarkets
Large	20
Medium	60
Small size	111
Total	**191**

Source: Author (2011)

A sample size of 50 supermarkets was used for the study, as this was considered representative of the population the respondent being the operations managers and the customer care personnel in the supermarkets. A proportionate stratified sampling was used to determine the sample size for each group of the supermarket as shown in the table below.

Table 3.2 Proportionate Sampling of Supermarkets in Nairobi

Supermarkets size	Population (N)	Proportion %	Sample size (n)
Large	20	10.49	5
Medium	60	31.4	20
Small	111	58.11	25
Total	**191**	**100**	**50**

Source: Author (2011)

Simple random sampling was used to get the proportions to avoid biasness.

3.3 Data Collection

Primary data was used during the study. The main instrument for data collection was structured questionnaires with closed and open – ended questions; divided into two sections. Section A being general information and capacity management strategies and section B being views on customer perception on service quality with regard to strategies applied and challenges faced during capacity management initiatives, as shown in

Appendix II. The questionnaires were administered to the 50 respondents by a drop and pick method.

3.4 Data Analysis

Data was analyzed through analytical statistics. The statistics was used to provide an overview of various aspect of capacity management, under study, in Nairobi supermarkets. The data was coded to enable the responses to be grouped into various categories with the aid of the Statistical Package for Social Sciences (SPSS). Descriptive statistics was used to summarize the data. This included percentages, frequencies and mean. Tables and graphs were used to present the data. A content analysis was used for open – ended questions.

CHAPTER FOUR: DATA ANALYSIS RESULTS

4.0 Introduction

This section presents the analysis and findings from the primary data that was gathered from the respondents who were the supermarket employees. All completed questionnaires were edited for completeness and consistency.

This study was guided by the following specific objectives:

i. To determine capacity management strategies and their influence on service quality in Nairobi Supermarkets.

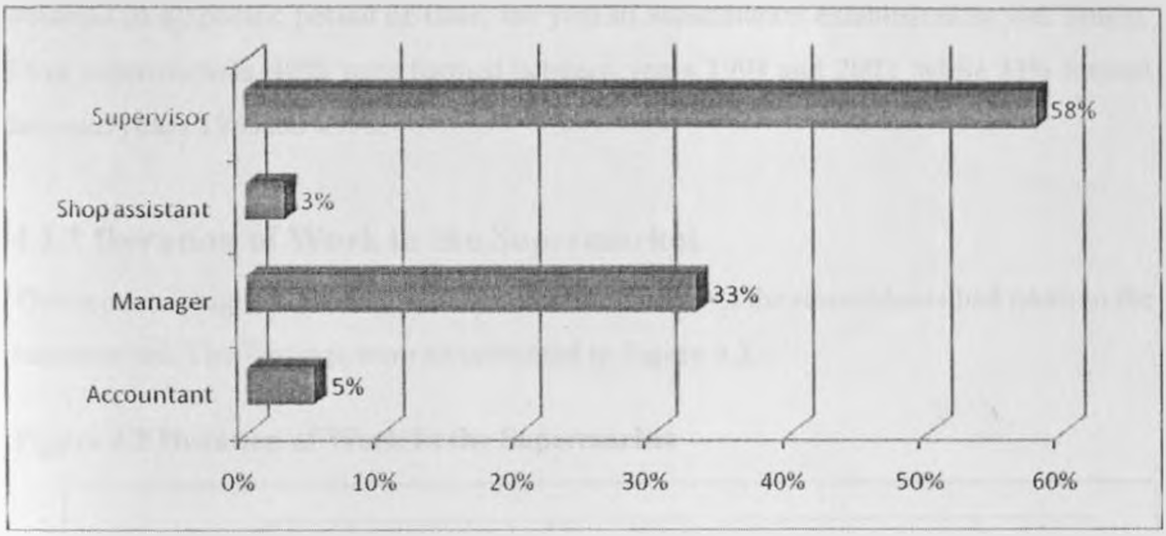
ii. To establish challenges in capacity management faced by Nairobi supermarkets.

4.1 Background Information

The study used a sample of hundred (50) questionnaires which were sent out to various respondents. The response rate was 80%. This section of the study sought to capture the respondents' details. Mugenda and Mugenda (1999) stipulate that a response rate of 50% is adequate for analysis and reporting. A response rate of 60% is good and a response rate of 70% is over very good .It is therefore an adequate rate to base the study conclusions. The results were as follows;

4.1.1 Respondents' Job Title

Figure 4.1 Respondents' Job Title



Source: Research Data

From Figure 4.1, it was found out that most of the respondents, who responded to the questionnaires, 58% were in the supervisors. This was followed by 33% who were in management position. There were accountants and shop attendants each represented by 5% and 3% respectively.

4.1.2 Year of Supermarket Establishment

Table 4.1 Year of Supermarket Establishment

Year of Establishment	Frequency	Percent
Before 1963	1	3
1963-1972	1	3
1973-1982	1	3
1983- 1992	13	33
1993-2002	16	40
2003 to date	4	10
Total	**40**	**100**

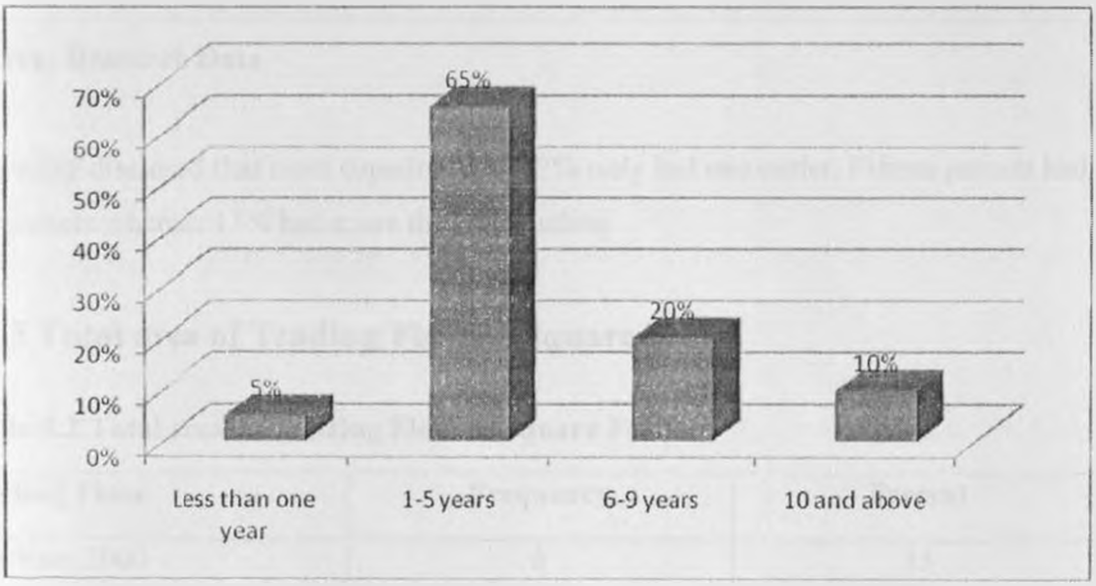
Source: Research Data

Since capacity of service is viewed as the highest possible amount of output that may be obtained in a specific period of time, the year of supermarket establishment was sought. Most supermarkets, 40% were formed between years 1993 and 2002, while 33% formed between years 1983and 1992.

4.1.3 Duration of Work in the Supermarket

This section sought to establish the duration of work that the respondents had taken in the supermarket. The findings were as presented in Figure 4.2.

Figure 4.2 Duration of Work in the Supermarket

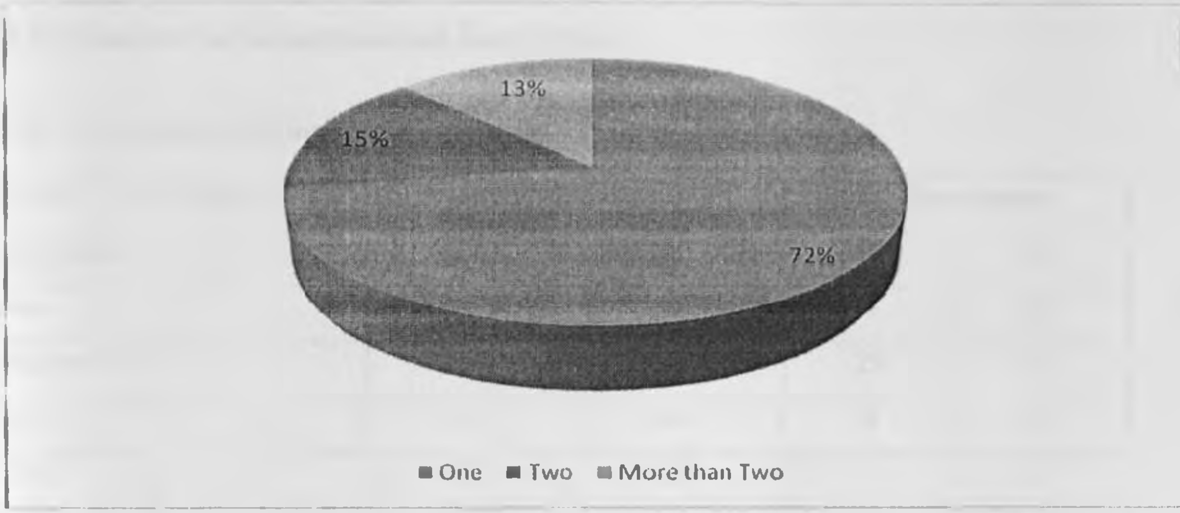


Source: Research Data

The study showed that generally, the workforce at the supermarket had stayed for a medium duration of time the supermarket, between one and five years as reflected by most respondents, 67%. This was followed by those who had been in the supermarket for between six and nine years at 20%. Those who had been employed for the shortest period, less than a year constituted 5%, whereas those who had stayed long, ten and more years were 10%.

4.1.4 Statistics on Supermarket Outlets in Nairobi

Figure 4.3 Statistics on Supermarket Outlets in Nairobi



Source: Research Data

The study disclosed that most supermarkets, 72% only had one outlet. Fifteen percent had two outlets whereas 13% had more than two outlets.

4.1.5 Total area of Trading Floor in Square Feet

Table 4.2 Total area of Trading Floor in Square Feet

Trading Floor	Frequency	Percent
Less than 2000	6	15
2001 to 4000	25	63
4001 to 6000	5	12
6001 to 8000	2	5
More than 8000	2	5
Total	**40**	**100**

Source: Research Data

The total area of trading floor in square feet was found to be fairly small, with majority of the supermarkets, 63% having between 2001 to 4000 square feet.

4.1.6 Number of Supermarket Employees

Table 4.3 Number of Employees

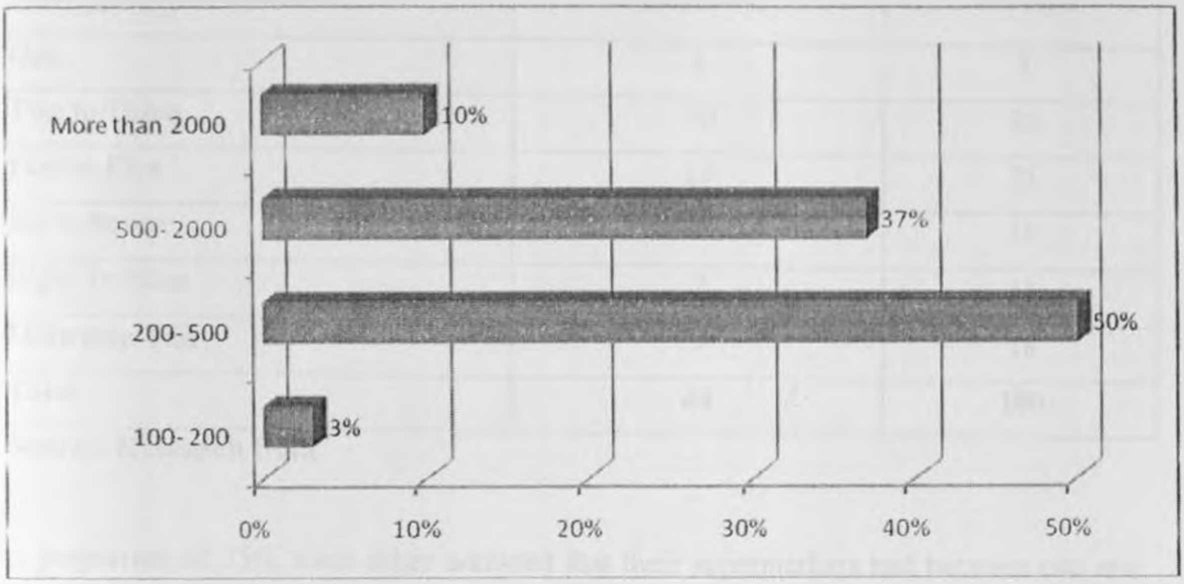
Number of Supermarket Employees	Permanent Employees		Casual Employees	
	N	%	N	%
None	0	0	4	10
Less than 10	5	13	29	73
10-20	19	48	4	10
21-30	10	25	1	3
31-40	1	3	0	0
41-60	1	3	1	3
More than 60	5	13	1	3
Total	**40**	**100**	**40**	**100**

Source: Research Data

From the study, it was revealed that, majority of the supermarkets employed both permanent and casual employees. However 10% of the respondents indicated that they didn't have casual employees. Moreover, most supermarkets, 73% employed less than 10 casuals, while 48% employed between 10 and 20 permanent employees.

4.1.7 Daily Average Number of Customers Served

Figure 4.4 Daily Average Number of Customers Served



Source: Research Data

Capacity usually depends on the volume and certainty of anticipated demand, as well as customer service. As such, most supermarkets, 50% served an average of between 200 and 500 customers daily. This was followed by 37% that served an average of between 500 and 2000 customers daily. Only 10% of the supermarkets served a majority of customers, more than 2000 on a daily basis and 3% served just a handful of customers of between 100 and 200.

4.1.8 Number of Supermarket Point of Sale

Table 4.4 Number of Supermarket Point of Sale

Supermarket Terminus	**Frequency**	**Percent**
One	1	3
Two to Three	10	25
Four to Five	10	25
Six to Seven	4	10
Eight To Nine	7	18
More than Ten	7	18
Total	**40**	**100**

Source: Research Data

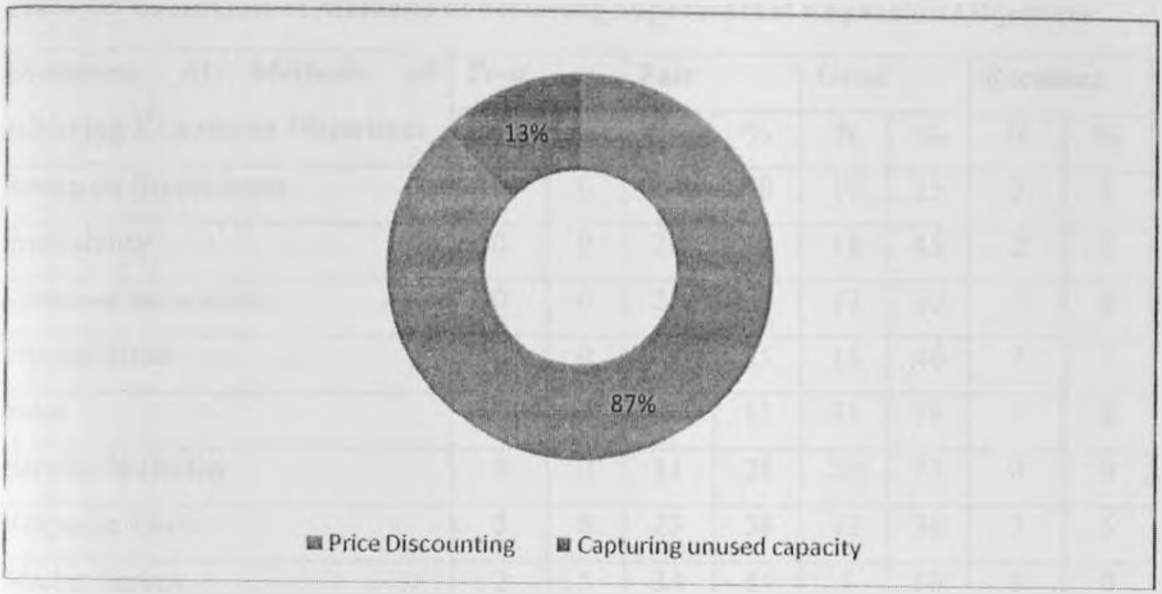
A proportion of 25%, each either admitted that their supermarkets had between two and three or four and five points of sale. Meanwhile, 18% had the highest number of terminus of more than10, whereas only 3% of the supermarkets had one point of sale.

4.2 Capacity Management Strategies

4.2.1 Methods of Achieving Supermarket Expansion Objectives

The respondents were asked to indicate the methods that really contributed to their supermarket achieving expansion objectives.

Figure 4.5 Methods of Achieving Supermarket Expansion Objectives



Source: Research Data

Among the three methods whose contribution to achieving expansion objectives in the supermarket, price discounting topped the list at 87 %. Capturing unused capacity was only an effective method as agreed by 13% of the respondents. Interestingly, automation method did not contribute to achieving expansion objectives in the supermarkets.

4.2.2 Usefulness of Methods of achieving Supermarket Expansion Objectives

The respondents were asked to indicate the extent to which the methods for achieving expansion objectives had been useful to the supermarket. The response was as indicated in Table 4.5.

Table 4.5 Usefulness of Methods of achieving Supermarket Expansion Objectives

Usefulness of Methods of achieving Expansion Objectives	Poor		Fair		Good		Excellent	
	N	%	N	%	N	%	N	%
Return on Investments	0	0	28	70	10	25	2	5
Profitability	0	0	20	50	18	45	2	5
Customer satisfaction	0	0	25	63	12	30	3	8
Process Time	0	0	22	55	16	40	2	5
Sales	0	0	6	15	31	78	3	8
Service flexibility	0	0	11	28	29	73	0	0
Response Time	3	8	23	58	12	30	2	5
Market Shares	2	5	34	85	4	10	0	0

Source: Research Data

The study revealed that in most supermarkets, 70% the methods for achieving expansion objectives had been fairly useful on the return on investments. On profitability, the methods for achieving expansion objectives had been fairly useful and good to the supermarket as represented by 50% and 45% respectively. Still, the methods had been fairly useful on customer satisfaction, process time, response time and market shares as represented by 63%, 55%, 58% and 85% in that order. The methods were good in sales and service flexibility as reflected by 78% and 73% respectively. None of the respondents admitted that the methods for achieving expansion objectives had been very poorly useful.

4.2.3 Strategies to Operationalize Supermarket Capacity Requirement

Table 4.6 Strategies to Operationalize Supermarket Capacity Requirement

Strategies to Operationalize capacity requirement	Yes		No	
	N	%	N	%
Remodeling of equipments	37	93	3	8
Scheduling of activities	40	100	0	0
Business Process Reengineering	15	38	25	63
Flexible workforce	40	100	0	0

Source: Research Data

There were four main strategies used to operationalize supermarket capacity requirements, of which all the 40 supermarkets surveyed indicated that they scheduled their activities and also had a flexible workforce. Another strategy used is the remodeling of equipments, as agreed by 93% of the respondents. A majority, 63% denied that business process reengineering was a strategy used by supermarkets to operationalize capacity requirements.

4.2.4 Achievements of Strategies to Operationalize Capacity Requirement

The respondents were asked to indicate the extent to which the strategies to operationalize capacity requirement had been useful in its achievements. The response was as follows.

Table 4.7 Achievements of Strategies to Operationalize Capacity Requirement

Achievements of Strategies	Service time		Increased customer		Sales increase		Service flexibility		Response time	
	N	%	N	%	N	%	N	%	N	%
Remodeling equipments	15	38	2	5	3	8	16	40	3	8
Scheduling of activities	10	25.0	0	0	0	0	17	43	13	33
Business Process Reengineering	2	5.0	2	5	11	28	1	3	3	8
Flexible workforce	13	33	2	5	4	10	6	15.0	15	38
Storage Facility	1	3	12	30	24	60	2	5.0	1	3

Source: Research Data

The strategy of remodeling equipments majorly led to Service flexibility and Service time, as indicated by 40% and 38% of the respondents correspondingly. Meanwhile, scheduling of activities was useful in achieving service flexibility (43%) and response time (33%). Flexible workforce on the other hand was useful in achieving response time (38%) and service time (33%). The usefulness of storage facility was evident in increased sales and increased customers as represented by 60% and 30%. However, business process reengineering strategy to operationalize capacity requirement was not quite effective as only 28% of the respondents indicated that it led to increased sales.

4.2.5 Factors Influencing Decisions to Expand Operational Capacity

Table 4.8 Factors Influencing Decisions to Expand Operational Capacity

Factors Influencing Decisions to Expand Operational Capacity	Yes		No	
	N	%	N	%
Increase of demand	39	98	1	3
Decrease of demand	2	5	38	95
Technological change	2	5	38	95
External environment	1	3	39	98
Competitors	17	43	23	58

Source: Research Data

There were several factors that could influence supermarket decisions to expand operational capacity. Nevertheless, only increase of demand and the competitors influenced the decisions of supermarkets, as indicated by 98% and 43%. Thus decrease of demand, technological change, and external environment were not viewed as factors influencing decisions to expand operational capacity.

4.2.6 Supermarket Long Term Capacity Strategies

Table 4.8 Supermarket Long Term Capacity Strategies

Supermarket Long Term Capacity Strategies	Yes		No		No Response	
	N	%	N	%		
Stay ahead of demand (carry excess capacity)	3	8	31	78	6	15
Lag behind demand (carry less capacity)	10	25	25	63	5	13
Match anticipated demand with service capacity	39	98	1	3	0	0

Source: Research Data

The study revealed that most supermarkets, 98% matched the anticipated demand with service capacity to enhance their long term capacity strategies. Other strategies such as staying ahead of demand and lagging behind demand were only used to a small extent as indicated by the minorities; 8% and 25% respectively. However some declined to respond to this section of the study.

4.2.7 Improvement in Operational Capacity and Influence on Service Quality

This section of the study sought to find out the extent the following factors contributed to improve operational capacity in supermarkets and their influence on service quality.

Table 4.8 Improvement in Operational Capacity and Influence on Service Quality

Improvement in Operational Capacity and Influence on Service Quality	Fair		Good		Excellent	
	N	%	N	%	N	%
Physical location	4	10	32	80	4	10
Stores and store procedures	9	23	28	70	3	8
Machinery and equipments	13	33	25	63	2	5
Information system	21	53	16	40	3	8
Human Resource	29	73	10	25	1	3
Quality assurance	29	73	8	20	3	8

Source: Research Data

For most respondents, 80% the physical location was a good factor contributing to improved operational capacity in supermarkets and influenced service quality. Stores and store procedures, machinery and equipments were also good factors as indicated by 70% and 63% respectively. On the other hand, information system, human resource and quality assurance were viewed to be contributing fairly to improve operational capacity in supermarkets and influence service quality, as reflected by 53%, 73% and 73% respectively.

4.2.8 Capacity Changes in Supermarkets

Table 4.9 Capacity Changes in Supermarkets

Capacity Changes in Supermarkets	Commonly		Rarely		Never	
	N	%	N	%	N	%
Benchmark	11	28	29	73	0	0
Involve employees when introducing capacity changes	6	15	26	65	8	20
Ignore the change and maintain status quo	4	10	14	35	22	55
Involve customer and other stake holders	3	8	27	68	10	25

Source: Research Data

It was found out that all the strategies in question such as benchmark, Involving employees when introducing capacity changes and Involving customers and other stake holders were rarely involved during capacity changes in supermarkets. This was represented by 73%, 65% and 68% respectively. Ignoring change and maintaining status quo as a strategy was never involved and also rarely involved, as indicated by 55% and 35% of the respondents. However, benchmarking was at least commonly used by 28% of the supermarkets.

4.3 Capacity Strategies Influence on Service Quality

The capacity strategies that respond to customer needs in supermarkets were sought for. The findings were as presented in Table 4.10

Table 4.10 Capacity Strategies Influence on Service Quality

Capacity Strategies	Service Time		Reduced Complains		Quick Clearance		Customer Safety		Continuous Service	
	N	%	N	%	N	%	N	%	N	%
Flexible workforce	28	70	4	10	3	8	0	0	5	13
Subcontracting	5	13	14	35	4	10	0	0	14	35
BPR	1	3	8	20	3	8	6	15	10	25
Variable shift	2	5	9	23	21	53	1	3	4	10
Remodeling equipments	2	5	6	15	6	15	20	50	4	10

Source: Research Data

There were several capacity strategies that responded to customer needs in supermarkets. The strategy of remodeling equipments majorly led to customer safety, 50% whereas Variable shift responded to quick clearance, at 53%. In the meantime, subcontracting responded to customer needs like reduced complains and continuous service, each represented by 35%. Flexible workforce on the other hand helped in meeting service time, 70%. However, business process reengineering strategy did not quite effective respond to customer needs, other than enhancing continuous service at 25%

4.3.1 Supermarket Performance to Customer Attributes

The respondents were asked to indicate the extent to which their supermarkets had performed along the following attributes to the customer.

Table 4.11 Supermarket Performance to Customer Attributes

Customer Attributes	Very Poor		Poor		Fair		Good		Excellent	
	N	%	N	%	N	%	N	%	N	%
Staff knowledge of customers	0	0	0	0	2	5	34	85	4	10
Equipment efficiency	0	0	0	0	10	25	28	70	2	5
Preparedness in case of emergency	1	3	4	10	8	20	22	55	5	13
Product variation	0	0	0	0	19	48	19	48	2	5
Price differentiation	0	0	0	0	25	63	10	25	4	10
Accessibility of location	0	0	0	0	29	73	8	20	3	8

Source: Research Data

The study showed that most supermarkets had a good performance to staff knowledge of customers, equipment efficiency and preparedness in case of emergency, as represented by proportions of 85%, 70% and 50% respectively. On product variation, 48%, each of respondents pointed out that there was either a fair or good performance. For price differentiation and accessibility of location customer attributes, supermarket performance was just fair. This constituted 63% and 73% respectively.

4.4 Supermarket Challenge during Capacity Management Initiatives

Table 4.12 Supermarket Challenge during Capacity Management Initiatives

Challenge during Capacity Management Initiatives	Yes		No	
	N	%	N	%
Bottlenecks	28	70	12	30
Financial inadequate	25	63	15	37
Customer mind set on status quo	13	33	27	67
New equipment installation	10	25	30	75
Employee resistance to change	4	10	36	90
Customer defining of service	2	5	37	93

Source: Research Data

Majority of the respondents admitted that there were only two main challenges that their supermarket faced during capacity management initiatives; bottlenecks and inadequate finances as represented by 70% and 63% in that order. On the contrary, challenges such as; customer mind set on status quo, new equipment installation, employee resistance to change, and customer defining of service were not viewed as main challenges by most respondents, 67%, 75%, 90% and 93% correspondingly.

4.4.1 Solving Challenges of Bottleneck in Operations

What action does your supermarket take to solve problems or challenges of bottleneck in it operations

Table 4.13 Solving Challenges of Bottleneck in Operations

Solving Challenges of Bottleneck in Operations	Yes		No	
	N	%	N	%
Make corrections appropriate to the problem	25	63	15	38
Establish cause and make correction	14	35	26	65
Take radical measures by removal or replacing	11	28	29	73
Change the entire system	2	5	38	95

Source: Research Data

There was only one action that supermarkets took to solve problems or challenges of bottleneck in operation. This was making corrections appropriate to the problem, as indicated by a majority of the respondents, 63%. The other actions such as; establishing cause and make correction, taking radical measures by removal or replacing and changing the entire system was used by a few supermarkets, 35%, 28% and 5% respectively.

4.4.2 Effective Management of Supermarket Capacity to offer Service Quality

The other information that the respondents proposed to be used by supermarkets to effectively manage capacity and to offer effective service quality include; enhancing adequate shopping space, expansion of the supermarkets especially for storage facility and avoiding space wastage to accommodate more customers and avoid customer congestion. Also, there was need of open display for easy accessibility and excellent customer service.

Regular staff training on issues such as capacity utilization, customer relations and safety measures was inevitable as it ensured the supermarkets had a competent staff, otherwise the need to replace non performers. In addition, better working equipments, properly maintained facilities and machines, customer safety standards changing unsafe equipments and servicing systems to avoid delayance was suggested. Employee motivation was recommended via incentives. To attract and retain customers, after sale service especially on delivering equipment to customers' destination was highly encouraged. Other suggestions for effective management of capacity were; analyzing competitors operations, timely information and effective communication system within and with customers, getting customer and supplier view on capacity initiative, proper management, understand needs, price differentiation.

CHAPTER FIVE

SUMMARY, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter gives a summary of the findings as well as the conclusions gathered from analysis of data. Findings have been summarized alongside the objective of the study; conclusions have been drawn from the study and the recommendations for actions given.

5.1 Summary of the Findings

5.1.1 Background Information

The study revealed that most supermarkets, 73% were formed between years 1983 and 2002, a good amount of time to probably enhance capacity. The study disclosed that most of the workforce, 67% had stayed for a medium duration of time of between one and five years in the supermarket. The study disclosed that most supermarkets, 72% only had one outlet and the total area of trading floor was found to be fairly small, with majority of the supermarkets, 63% having between 2001 to 4000 square feet.

Generally, supermarkets employed both permanent and casual employees with majority having 73% less than 10 casuals and 48% between 10 and 20 permanent employees. However 10% of indicated that they didn't have casual employees. Capacity usually depends on the volume and certainty of anticipated demand, as well as customer service. As such, most supermarkets, 87% served an average of between 200 and 2000 customers daily. A proportion of 25%, each either admitted that their supermarkets had between two and three or four and five points of sale, while, 18% had the highest number of terminus of more than ten.

5.1.2 Capacity Strategies

Price discounting was found to be the most used method of contributing to achieving expansion objectives in the supermarket, 87 %. In addition, in most supermarkets, the methods for achieving expansion objectives had been fairly useful on the return on investments and profitability as represented by 70% and 50% respectively. Still, the methods had been fairly useful on customer satisfaction, process time, response time and market shares as represented by 63%, 55%, 58% and 85% in that order. The methods were good in sales and service flexibility as reflected by 78% and 73% respectively.

There were four main strategies used to operationalize supermarket capacity requirements, of which all the 40 supermarkets surveyed indicated that they scheduled their activities and also had a flexible workforce. Another strategy used is the remodeling of equipment, as agreed by 93% of the respondents. A majority, 63% denied that business process reengineering was a strategy used by supermarkets to operationalize capacity requirements. The strategy of remodeling equipment majorly led to service flexibility (40%) and service time (38%). Meanwhile, scheduling of activities was useful in achieving service flexibility (43%) and response time (33%) and flexible workforce was useful in achieving response time (38%) and service time (33%). The usefulness of storage facility was evident in increased sales (60%) and increased customers (30%). However, business process reengineering strategy to operationalize capacity requirement was not quite effective as only 28% of the respondents indicated that it led to increased sales.

Only increase of demand and the competitors influenced the decisions of supermarkets, significantly as indicated by 98% and 43%. Thus decrease of demand, technological change, and external environment were not viewed as main factors influencing decisions to expand operational capacity. The study revealed that most supermarkets, 98% matched the anticipated demand with service capacity to enhance their long term capacity strategies. Other strategies such as staying ahead of demand and lagging behind demand were only used to a small extent as indicated by the minorities; 8% and 25% respectively.

For most respondents, 80% the physical location was a good factor contributing to improved operational capacity in supermarkets and influenced service quality. Stores and store procedures, machinery and equipments were also good factors as indicated by 70% and 63% respectively. On the other hand, information system, human resource and quality assurance were viewed to be contributing fairly to improve operational capacity in supermarkets and influence service quality, as reflected by 53%, 73% and 73% respectively.

Strategies such as benchmark, Involving employees when introducing capacity changes and Involving customers and other stake holders were rarely involved during capacity changes in supermarkets. This was represented by 73%, 65% and 68% respectively. Ignoring change and maintaining status quo as a strategy was never involved and also rarely involved, as indicated by 55% and 35% of the respondents. However, benchmarking was at least commonly used by 28% of the supermarkets.

5.1.3 Capacity Strategies Influence on Service Quality

There were several capacity strategies that responded to customer needs in supermarkets. The strategy of remodeling equipments majorly led to customer safety, 50% whereas Variable shift responded to quick clearance, at 53%. In the meantime, subcontracting responded to customer needs like reduced complains and continuous service, each represented by 35%. Flexible workforce on the other hand helped in meeting service time, 70%. However, business process reengineering strategy did not quite effective respond to customer needs, other than enhancing continuous service at 25%. The study revealed that most supermarkets had a good performance to staff knowledge of customers (85%), equipment efficiency (70%) and preparedness in case of emergency (50%). On product variation, 48%, each of respondents pointed out that there was either a fair or good performance. For price differentiation (63% a) and accessibility of location customer attributes (73%), supermarket performance was just fair.

5.1.4 Capacity Strategies Challenges

Majority of the respondents admitted that there were only two main challenges that their supermarket faced during capacity management initiatives; bottlenecks and inadequate finances as represented by 70% and 63% in that order. On the contrary, challenges such as; customer mind set on status quo, new equipment installation, employee resistance to change, and customer defining of service were not viewed as main challenges by most respondents, 67%, 75%, 90% and 93% correspondingly. There was only one action that supermarkets took to solve problems or challenges of bottleneck in operation. This was making corrections appropriate to the problem, as indicated by a majority of the respondents, 63%. The other actions such as; establishing cause and make correction, taking radical measures by removal or replacing and changing the entire system was used by a few supermarkets, 35%, 28% and 5% respectively.

The other information that the respondents proposed to be used by supermarkets to effectively manage capacity and to offer effective service quality include; enhancing adequate shopping space, expansion of the supermarkets especially for storage facility and avoiding space wastage to accommodate more customers and avoid customer congestion. Also, there was need of open display for easy accessibility and excellent customer service. Regular staff training on issues such as capacity utilization, customer relations and safety measures was inevitable as it ensured the supermarkets had a competent staff, otherwise the need to replace non performers. In addition, better working equipments, properly maintained facilities and machines, customer safety standards changing unsafe equipments and servicing systems to avoid delayance were suggested. Employee motivation was recommended via incentives. To attract and retain customers, after sale service especially on delivering equipment to customers' destination was highly encouraged. Other suggestions for effective management of capacity were; analyzing competitors operations, timely information and effective communication system within and with customers, getting customer and supplier view on capacity initiative, proper management, understand needs, price differentiation.

5.2 Discussions

According to Lovelock (1992) capacity of service has the highest possible amount of output that may be obtained in a specific period of time with a predefined level of staff.

The finding of the study on price discounting method of contributing to achieving expansion objectives is consistent with those of (Stone, 1990) who postulated its use with low periods of sales. The methods for achieving expansion objectives had been fairly useful on the return on investments and profitability, customer satisfaction, process time, response time and market shares. The usefulness of the methods was good in sales and service flexibility. The service organizations require those who can perform more than one job (Masese, 2001).

The four main strategies used to operationalize supermarket capacity requirements, of which all the 40 supermarkets surveyed indicated that they scheduled their activities and also had a flexible workforce and a few used remodeling of equipments and business process reengineering. The increase of population in Nairobi as observed by Neven and Readorn (2005), has led to a capacity challenge in supermarkets in that customer demands are always changing and competition is high, hence the need of strategies on how to manage their capacity to remain in service business, Ochieng (2006).

The strategy of remodeling equipment majorly led to service flexibility and service time while scheduling of activities was useful in achieving service flexibility and response time and flexible workforce was useful in achieving response time and service time. The usefulness of storage facility was evident in increased sales and increased customers. While capacity may be the same in term of service stations, the service rate per station per day may provide better customer service flexibility and satisfaction (Voneche, 2000). Supermarkets usually matched the anticipated demand with service capacity to enhance their long term capacity strategies. Only increase of demand and the competitors influenced the decisions of supermarkets significantly. This is not consistent with Armistead (1990) findings that noted that many service organizations are no longer gaining clear competitive advantage from the provision of certain levels of quality. According to Van Looy et al, (1998) observed capacity management problems emerge from the manner in which forecasting, prioritizing, alternating bottlenecks, scheduling, and capacity and coping strategies are used.

The study revealed that the physical location, stores and store procedures, machinery and equipments were good factors contributing to improved operational capacity in supermarkets and influenced service quality. However, information system, human resource and quality assurance were viewed to be contributing fairly. According to Sasser *et al* (1982) capacity expansion requires addition of equipments or personnel at the site, duplication of existing service station in additional locations, or adding of new service stations at new locations, or a combination of both to meet growing demand for the required service.

The study revealed that most supermarkets had a good performance on staff knowledge of its customers, equipment efficiency, product variation and preparedness in case of emergency. For price differentiation and accessibility of location customer attributes performance was just fair. The study revealed that there were only two main challenges that supermarkets faced during capacity management initiatives; bottlenecks and inadequate finances. Van Looy et al, (1998) observed capacity management problems emerging from the manner in which forecasting, prioritizing, alternating bottlenecks, scheduling, and capacity and coping strategies are used. The only action that supermarkets took to solve problems or challenges of bottleneck in operation was making corrections appropriate to the problem.

5.3 Conclusion

The study concludes that the main method of contributing to achieving expansion objectives of supermarkets is price discounting. Moreover, the methods for achieving expansion objectives had been fairly useful on the return on investments and profitability, customer satisfaction, process time, response time and market shares. The usefulness of the methods was good in sales and service flexibility.

The strategies used to operationalize supermarket capacity requirements were; scheduling activities, a flexible workforce, remodeling of equipments and business process reengineering. Remodeling equipment majorly led to service flexibility and service time while scheduling of activities helped in achieving service flexibility and response time while flexible workforce was useful in achieving response time and service time. The usefulness of storage facility was evident in increased sales and increased customers.

Supermarkets usually matched the anticipated demand with service capacity to enhance their long term capacity strategies. Only increase of demand and the competitors influenced the decisions of supermarkets significantly. The study concludes that physical location, stores and store procedures, machinery and equipments were good factors contributing to improved operational capacity in supermarkets and influenced service quality. However, information system, human resource and quality assurance were viewed to be contributing fairly.

Strategies such as benchmark, involving employees when introducing capacity changes and involving customers and other stake holders were rarely involved during capacity changes in supermarkets. On the contrary, ignoring change and maintaining status quo as a strategy was rarely or never involved. Capacity strategies such as remodeling equipments majorly led to customer safety, variable shift responded to quick clearance, subcontracting led to reduced complains and continuous service, whereas flexible workforce helped in meeting service time. However, business process reengineering strategy did not quite effective respond to customer needs, other than enhancing continuous service.

The study concludes that most supermarkets had a good performance on staff knowledge of its customers, equipment efficiency, product variation and preparedness in case of emergency. For price differentiation and accessibility of location customer attributes performance was just fair. There were two main challenges that supermarkets faced during capacity management initiatives; bottlenecks and inadequate finances. The only action that supermarkets took to solve problems or challenges of bottleneck in operation was making corrections appropriate to the problem.

5.4 Limitations of the study

The main challenge faced was inadequate knowledge among the respondents in operations management leading to more clarifications which may have imposed some biases. The researcher had to use a lot of time administering the data collection instrument because the concept being investigated had to be explained fully to several respondents. Finally some large supermarkets declined to participate in the study citing lack of time to respond.

5.5 Recommendations

Due to the increasing advancement in information technology, automation through Smart cards, online payment and ability to place orders directly without having to travel to the supermarket for deliveries should be exploited by supermarkets with large economies of scale. There is need for the supermarkets management to understand customers want so as to translate these expectations into return on investments and profitability, customer satisfaction, good process and response time and service flexibility.

The strategies supermarkets use to operationalize capacity requirements should be re-looked into. The employees should be adequately motivated to enhance a flexible workforce, and new safe equipments be purchased which in turn leads to service flexibility, improved service and response time and increased sales. Market research on the behavior of demand and supply, Technological change as well as External environment factors need to be carried out so as to ascertain the best operational capacity. While it is prudent to determine the physical location, stores and store procedures, machinery and equipments aspects of information system, human resource and quality assurance should be addressed.

During capacity changes, supermarkets should uphold strategies such as benchmarking, involving employees, customers and other stake holders while taking into account the impact of proposed change. Customer safety, service time and quick clearance are some of the main factors a consumer considers before buying from a supermarket. The capacity strategies adopted should adequately address these concerns above board. To achieve a continuous good performance, staff training is inevitable. Further, teamwork and effective, prompt communication should be done within all the management levels.

The main challenges that supermarkets face ought to be carefully addressed to ensure that resources are utilized as efficiently as possible and customers are satisfied.

5.6 Suggestions for Further Studies

This study concentrated on the capacity management strategies and their influence on service quality challenges in capacity management. Further studies should be carried on the challenges of capacity management since this was not adequately exhausted.

Also, this study was a descriptive survey research study; further studies on the same objectives should be undertaken through a case study since a case is a very powerful form off qualitative analysis that involves a careful and complete observation of a unit.

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APPENDICES

Appendix I: Transmittal letter to the respondents.

University of Nairobi
School of Business
P.O Box, 30,197,
Nairobi, Kenya.

Date. 29TH August 2011
Telephone: +254 (020) 732160
Telegrams: "Varsity", Nairobi
Telex: 22095 varsity.

To Whom IT May Concern

The bearer of this letter...**Samba Stephen Midega**..............................

Registration Number ...**D61/60054/2010**........ ....,

is a Master of Business Administration (MBA) student at the University of Nairobi.

The student is required to submit a research project as part of partial fulfillment of the requirement of Masters Degree in Business Administration. We would like the student to do their project on real problems affecting firms in Kenya today. We would therefore appreciate if you assist the student collect data in your organization to this end.

The results of the report will be used solely for purpose of the research and in no way will your organization be implicated in the research findings.

The project is entitled *Investigation of Capacity Management Strategies and their Influence on Service Quality: Case of Nairobi Supermarkets.*

A copy of the report can be availed to the organization on request.

Thank You.

The Coordinator, MBA Program
MBA Office, AMBANK HOUSE

Appendix II: Questionnaire

My name is Stephen M. Samba, MBA student, University of Nairobi. This questionnaire is designed to collect information on the capacity management strategies used in supermarkets in Nairobi and their influence on service quality. All information gathered in this research will be treated with outmost confidentiality and will be strictly used for the subject matter.

Date………………………,

Questions Section A: Background Information and Capacity strategies

1. Please indicate your job title …………………..
2. Name of the supermarket……………………………………..
3. Year of establishment…………………………………..
4. How long have you worked in this supermarket?
   a) Less than one year
   b) 1-5 years
   c) 6-9 years
   d) 10 and above
5. How many outlets do you have in Nairobi? <please tick appropriately>

   (One) [ ]   (Two) [ ]   (More than Two) [ ]
6. Total area of trading floor in square feet
   i. Less than 2000 [ ]
   ii. 2001 t0 4000 [ ]
   iii. 4001 to 6000 [ ]
   iv. 6001 t0 8000 [ ]
   v. More than 8000 [ ]
7. (a)How many employees do you have?..

   (b) Distribute them according to:

   (i) Permanent employees…………………

   (ii) Casual employees…………………

(iii) Other (specify)...

8. On average how many customers do you serve in a day?

   a) 100- 200

   b) 200- 500

   c) 500- 2000

   d) More than 2000

9. How many point of sale, terminus do you have in this supermarket?......................

10. (a) Which methods has really contributed to your supermarket in achieving expansion objectives:

   (i) Automation [ ]

   (ii)Price Discounting [ ]

   (iii) Capturing unused capacity [ ]

   (b) On the scale of 1-5, rate the extent to which the method has been useful to this supermarket with regard to the following:

Where 1-v poor 2-poor 3-fair 4-good 5-exellent

		1	2	3	4	5
a	Return on Investments					
b	Profitability					
c	Customer satisfaction					
d	Process Time					
e	Sales					
f	Service flexibility					
g	Response Time					
h	Market Shares					

11. (a)Kindly specify whether your supermarket uses the following strategies to operationalize your capacity requirements? Yes No

   (a) Remodeling of equipments ( ) ( )

   (b) Scheduling of activities ( ) ( )

   (c) Business Process Reengineering ( ) ( )

   (d) Flexible workforce ( ) ( )

(b). To what extent would you say these strategies have been useful in achieving the following.

	Strategies	service time	Increased customer	Sales increase	Service flexibility	Response time
a	Remodeling equipments					
b	Scheduling of activities					
c	Business Process Reengineering					
d	Flexible workforce					
e	Storage Facility					

12. What factors usually influence your decisions to expand your operational capacity? (Multiple responses allowed.)

a. Increase of demand [ ]
b. Decrease of demand [ ]
c. Technological change [ ]
d. External environment [ ]
e. Competitors [ ]
f. Other (specify)...

13. Do your supermarket use any of the following in its long term capacity strategies?

		YES	NO
a.	Stay ahead of demand (carry excess capacity)	[ ]	[ ]
b.	Lag behind demand (carry less capacity)	[ ]	[ ]
c.	Match anticipated demand with service capacity	[ ]	[ ]
d.	Other, (specify)...		

14. To what extent have the following factors contributed to improve operational capacity in your supermarket and their influence on service quality?

Please rank each of the following on a scale of 1-5;

1-V.poor 2-Poor 3-Fair 4-Good 5-Excellent

	Factors	V.poor	Poor	Fair	Good	excellent
a	Information system					
b	Physical location					
c	Human Resource					
d	Quality assurance					
e	Machinery & equipments					
f	Stores and store procedures					

15. To what extent are the following strategies involved during capacity changes in your supermarket?

		Commonly	Rarely	Never
a	Involve employees when introducing capacity changes			
b	Benchmark			
c	Ignore the change and maintain status quo			
d	Involve customer and other stake holders			

Section B: Capacity Strategies influence on service quality and challenges

16. Please tick the capacity strategy that respond to the following customer needs in your supermarket.

Strategies	Service time	Reduced complains	Quick clearance	Customer safety	Continuous service
Flexible workforce					
Subcontracting					
BPR					
Variable shift					
Remodeling equipments					

17. Please indicate on scale below by ticking the extent to which your supermarket has performed along the following attributes to the customer. Scale excellent 5; Good 4; Fair 3; Poor 2; V.poor 1

Customer attributes	V.poor	Poor	Fair	Good	Excellent	
Price differentiation						
Product variation						
Staff knowledge of customers						
Accessibility of location						
Equipment efficiency						
Preparedness in case of emergency						

18. (a) Please tick the main challenge your supermarket faces during capacity management initiatives. (Multiple responses allowed)

a) Customer defining of service [ ]
b) New equipment installation [ ]
c) Bottlenecks [ ]
d) Employee resistance to change [ ]
e) Customer mind set on status quo [ ]
f) Financial inadequate [}
g) Other, (specify)..

(b) What action does your supermarket take to solve problems or challenges of bottleneck in it operations? (Multiple responses allowed)

a) Change the entire system [ ]
b) Establish cause and make correction [ ]
c) Take radical measures by removal or replacing [ ]
d) Make corrections appropriate to the problem [ ]

19. What other information would you like to provide that the supermarket uses to effectively manage capacity to offer effective service quality? ....

Thank you for your cooperation

Appendix III: List of Supermarkets in Nairobi

House of Manji Data Base as at (2011), list of supermarkets in Nairobi

1. Nakumatt
2. Uchumi
3. Ukwala
4. Tuskys
5. Lucky star
6. Jack and Jill
7. Fair lane
8. Chandarana
9. Safeways
10. Select 'n' pay
11. Magic
12. Mega Market
13. Fairdeal
14. City Mattresses
15. Country Mattresses
16. Sheela
17. Woolworths
18. Ebrahims
19. Rikana
20. Trster
21. Mumsies
22. JDSS
23. Baranuki
24. Peponi Grocery
25. Stellar
26. Muthaiga
27. Santosh
28. Jamia
29. Gigiri
30. Starehe
31. Naivas
32. Schilada
33. Nova
34. New Westlands
35. Deepak Cash &carry
36. Queensway
37. Continental
38. Karen
39. Spring valley
40. Westlands stores
41. Super Value
42. Spicy Spice
43. Ongata Rongai
44. Umoja Mini
45. Maridadi
46. Eastleigh Mattresses
47. Muthaite
48. Roysambo Grocery
49. MITO
50. Mount (k) sundries
51. Budget
52. South C
53. Tesco
54. Tirana
55. Joja Ks
56. Fair Price
57. Harrys
58. Salisbury
59. Shopping .p
60. FCC
61. Ngara
62. MIS whole store
63. Centalinte
64. Good earth
65. Kieni
66. Uchuzi
67. Bist store
68. Lucky & Sons
69. Kalay
70. Rose Collections
71. Alliance
72. Flora petty
73. Seven eleven
74. Midas touch
75. Trichem
76. Lucky shop
77. Mathare
78. Sheera
79. Njonde

80. Robert Ondiek
81. Dry House co.
82 New Ricken
83. Rajesh Gloria
84. Well Brand
85. Ngara Road
86. Lilian Rahisi
87. Mwiki
88. Fransa
89. Datelvey
90. Rafaels
91. Holiffied Super stores
92. Jojan
93. Cheeji
94. Victory
95 Vantage
96. Stella
97. Amil & Dryesh
98. Total Thika Rd
99 Geska
100. Green forest
101. Donholm Star shop
102. White star
103. Jazeer
104. Kiaiwa
105. Elipa
106. Kimani
107. Macson
108. Rose Jam
109. Star
110. Star
111. Kahawa
112. Gipsy
113. Furs
114. Greenfield
115 Leadsway
116. Success
117. K&A
118. Gulab chand
119. Goodfar Stores
120. Ronnys
121. Green sport
122. Porarim
123. Pop –in
124. Tricor
125. Decoy"c
126. Kenton
127. Chemusia
128. Fairose
129. Fontana
130. Mumbi
131. P& shah
132. Baobab Mimi
133. Sikendo Grocers
134. Pangani
135. Juja Road
136. George
137. Sunrise
138. Umoja
139. Ridge ways
140. Ilamindi
141. Susu
142. Tihana
143. Joss
144. Hurligham Grocery
145. Calodermian
146. Sippys
147. Versian
148. Mesora
149. Furaha
150. Save More
151. Shaflus
152. A&D
153. Quick Pick
154. Vijiko
155. Susy
156. Faine Fayne
157. Corner
158. Shah & Sons
159. Acacia
160. Borno
161. Choices
162. Supra
163. Nafroni
164. Jeska
165. Alpany
166. Marta
167. Angelas
168. Better price

169. Broadway
170. Evergreen
171. Reinani
172. Frankaal
173. Bashi
174. Toyo
175. Furs
176. Furaha
177. Tip Top
178. Lalab
179. Henenitta
180. Camesh
181. Fremo
182. Ahmed Karim
183. Ruble
184. Karanjas
185. Juriha
186. Pricerite
187. Kenis
188. His& Hers
189. Sai
190. Ladywood
191. African Grocery