RELATIONSHIP BETWEEN SERVICE QUALITY AND OPERATIONAL PERFORMANCE OF PUBLIC HOSPITALS IN MOMBASA COUNTY, KENYA

BY

GERALDINE KAWIRA MUNENE

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DECLARATION

Declaration by the student

This research project is my original work and it has not been submitted for the award of a degree in any other university.

Signed…….

Date……..…….

Geraldine Munene

D61/80406/2012

Declaration by the supervisor

This research project has been submitted for examination with my approval as University Supervisor.

Signed…….

Date…….

Kingsford Rucha

Department of Management Science,

School of Business,

University of Nairobi.

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I would like to appreciate my parents and siblings for their unwavering support and prayers.

I also thank my colleagues, friends and classmates, who encouraged me and assisted me during this study.

DEDICATION

To my beloved parents Celestine and Winfred Munene, my siblings Jacqueline, Yvonne, Benson and Brian andmy boyfriend Mwirigi. I am forever grateful for your unending prayers, love, patience, encouragement and support.

ABSTRACT

Healthcare system in Kenya aims to provide patient centered care and improve quality of care by ensuring health interventions are organized around patient needs and expectations. In Mombasa County patients suffering from minor ailments travel for long distances to the county referral hospital due to lack of equipment, personnel and drugs at health centersthough the average distance to healthcare facilities is 0.55km. The study aimed at establishing service quality dimensions perception by customers anddetermining their relationship with operational performance of public hospitals in Mombasa County. The study adopted a cross-sectional descriptive survey research design. The population of study was 24,688 which was the average monthly cumulative patients seen in the four public hospitals in Mombasa County which included a tier 5, a tier 4 and two tier 3 hospitals. Proportionate stratified random sampling was used to determine the sample size. The study used primary data and data was collected from patients using a structured questionnaire with 252 questionnaires completely filled. The study found that hospital tangibles, service assurance, service reliability, empathy of services and service responsiveness were perceived to be poor.The study found that the hospitals offered poor quality of services, had long waiting times to see doctors and for laboratory tests and poor communication skills and relationships between patients and medical staffwhich affected service quality perception. The findings of the study suggest a strong relationship between operational performance and service quality with a correlation coefficient of 0.406. Service quality dimensions reliability, responsiveness, empathy, assurance and tangibles all had a significant positive relationship with operational performance. Sufficient drugs and X-ray equipment are required by hospitals to ensure provision of service quality and sufficient and proficient health personnel employed to reduce waiting time and improve service quality.

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LIST OF ABBREVIATIONS AND ACRONYMS

CGM - County Government of Mombasa

GDP - Gross Domestic Product

KACC - Kenya Anti-Corruption Commission

KNBS - Kenya National Bureau of Statistics

KNH - Kenyatta National Hospital

MOH - Ministry of Health

SERVPERF - Service Perception Model

SERVQUAL - Service Quality Model

UK - United Kingdom

USA - United States of America

WHO - World Health Organization

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Organizations are using quality as a competitive advantage to gain and maintain market share, increase return on investments, reduce cost and improve organizational performance, (Rapert & Wren, 1998). Quality is key in determining consumer's choice in products and services. Quality concept in services is complex and ambiguous due to difficulties in measuring and defining. Service quality is an attitude formed by customers about organizations products and services based on assessment of performed service in comparison to prior expectations of the firm offerings, (Parasuraman, Zeithaml& Berry, 1988). Services are intangible, heterogeneous, perishable and consumption and production is inseparable making service quality dependent on customer perception of performed service which includes the process and outcome of performed service compared to their prior expectations. Meeting customers' needs and anticipations is key to endurance and growth of all organizations. Firms that strive to meet their customers' needs maintain their market share and ensure customer satisfaction and loyalty, (Berry, Zeithmal & Parasuraman, 1985; 1988). Customers' contentment with firm offerings has a substantialand consistent effect on purchase intentions hence managers have to emphasize customer satisfaction programs tomaintain and increase their market shares, (Cronin & Taylor, 1992).

Service quality can be conceptualized in three theories; customer satisfaction theory, attribute theory and interaction theory, (Chase & Bowen, 1991). Customer satisfaction theory derived from Parasuraman, Zeithaml and Berry (1985) work examines service quality from customers' perception and experience of performed service compared to their expectations. A discrepancy between customers'perception of performed services and their anticipations means a gap in service quality exists. The second theory is attribute theory in which service quality is determined by the service provision system attributes with the assumption that management has a significant control of the input attributes that determine service quality. Service delivery systems require control and coordination to ensure provision of standardized services to all customers, (Weiner, 1985). The third theory is interaction theory where service quality arises when there is

collective gain amongst customers and employees and all their needs are met and satisfied, (Klaus, 1985).

Health is anessential human right and attaining the utmost possible level is the greatestimportant universal social goal. Health is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, (WHO, 1978). Kenya's healthcare is provided by national teaching and referral hospitals, county hospitals, faith based hospitals, non-governmental hospitals and private hospitals. Healthcare in Kenya faces many challenges: insufficient health care workers and funding, poor information communication, poor service quality, poor management of healthcare, inequitable distribution of healthcare facilities, insufficient information to base policies and guidelines, and insufficient drugs and other medical supplies, (GoK, 2008).

1.1.1 Service Quality

Zeithaml (1988) defined service quality as customers' judgment of distinction or superiority of firm offerings. Parasuraman et al, 1988 defined quality of services as a gap in consumer's expectations and perceived performance of the service therefore service quality is defined and measured from customers' point of view and it's the customers' definition of quality that counts. Firms have internal and external customers, and satisfaction of internal customers is the source of excellent quality as they are enabled to perform their tasks more effectively to achieve external customer satisfaction and retention, (Zairi, 2000). Therefore service quality can be defined as satisfying requirements and meeting anticipations of consumers, personnel and owners, (Edvardsson, 1998).

Service quality is a feasible competitive weapon for all firms, both manufacturing and service. Manufacturers of goods have limited competitive advantages due to application of technology which has brought production costs down andincreased the variety of productsoffered to the degree that price and product variety are less significant competitive advantages. Organizations are moving from product oriented to service oriented operations strategies and using speed of provision through the supply chain, service quality and support structures to remain competitive in the current business environment, (Quinn, Dorley & Paquette, 1990). Organizations need to understand determinants of service quality for their market segments of interest to improve perceived service quality and corporate image, (Johnson, 1994). Service quality has two

dimensions; technical quality which is “what is delivered” and functional quality which is “how the service is delivered”. Functional quality is more significant variable in formation of consumer perceptions and service diversification compared to technical quality, (Gronroos, 1984).

1.1.2 Operational Performance

Operations management is how efficiently and effectively an organization uses its resources to meet the expectations and needs of its customers. Operational performance of an organization is a measure against standards or prescribed indicators of efficiency, productivity, effectiveness, capacity utilization, perceived value of offerings and environmentalobligations like cycle time, waste reduction and regulatory compliance. Operations performance has five basic objectives; quality, cost, reliability, speed and flexibility as key competitive priorities, (Slack, Chambers & Johnston, 2010).

Operational performance measures are used to evaluate, control and improve operations processes to meet organization goals and performance targets. Organization success measures do change over time therefore managers should link operations activities to operations strategies and operational performance measures derived from the organizations strategy to remain competitive, (Neely, 1999). Operational performance measures include customer satisfaction, quality, speed of delivery, productivity, flexibility, cash flow and market share. Operations function is the back bone of every company and it represents the bulk of an organizations assets and enables organizations to respond to their customers’ needs and compete effectively,(Slack et al, 2010).

1.1.3 Service Quality and Operational Performance

Operational performance plays an important role in management of services, organization development and success. Service operations have to be based on customer preferences and taste and efficient to meet and exceed customer expectations, (Johnson, 1994). To compete strategically organizations have to implement and commit to service quality in all their operational processes. Organizations’ need to allocate adequate resources and give due diligence to employees and processes issues and problems to improve service quality and overall operational performance. Service performance has two dimensions; operational oriented dimension that entails all activities executed by service personnel that lead to productivity, effectiveness and consistent quality; andinterpersonal element

that entails all activities that augment customer relationship, (Longenecker & Scazzero, 2000).Organizations have to develop strategic service visions by developing service concepts that fully address targeted customers' needs and wants, structure operations strategies to support the service concept and design a service delivery system that is customer oriented to meet and exceed their expectations, (Heskett, 1987).

Service quality is measured by extent to which services delivered meet or exceed customer expectations. Gronroos (1984) proposed a model to measure quality of service using technical quality and functional quality components of the service process. Parasuraman et al, (1988) proposed SERVQUAL model that measures quality of service as a difference in perceived quality of service and anticipated quality of service in the firm offerings using five dimensions that describe service quality domain adequately. These dimensions include; tangibles, responsiveness, reliability, assurance and empathy. SERVPERF a perception only model based on SERVQUAL model attributes was found to be more efficient in explaining variation of service quality and purchase intensions in various service industries compared to SERVQUAL, (Cronin & Taylor, 1992).

A firms' operational performance affects customer satisfaction and loyalty significantly with dependability having a stronger influence on customer satisfaction and loyalty. An increase in service demand without sufficient capacity or increase in capacity to deliver promised service leads to pressure and fall of dependability aspect of operations leading to a fall in service quality and speed of delivery as lead time quoted to customerincreases negatively affecting their satisfaction and loyalty, (Kumar, Batista & Maull, 2011).

1.1.4 Public Hospitals in Mombasa County

Mombasa County is located in the coastal region of Kenya and is made up of six constituencies; Changamwe, Mvita, Jomvu Kuu, Likoni, Nyali and Kisauni. Healthcare in Kenya is organized in a hierarchical system comprising of six tiers with KNH at the apex at tier 6 and community level at tier 1 to allow for referral of complicated cases to a higher level. The County has only five tiers of healthcarefacilities; tier 1 refers to community level, tier 2 refers to dispensaries , tier 3 refers to sub-County hospitals and health centers , tier 4 refers to County hospitals and tier 5refers to regional referral hospital, (Ref. Appendix II). The facilities provide different levels of care; the regional referral hospital provides specialized care which includes intensive care, life support and specialized consultations; County hospitals provide comprehensive therapeutic and

surgical services; sub-county hospital providecurative services with a surgery unit for caesarean sections; health centers and dispensaries providebasic curative care and community offers preventive care. Hospitals offer secondary and referral care with different cadres of personnel offering outpatient and inpatient services while health centers and dispensaries offer primary care with few personnel offering outpatient services only,(GoK, 2013).

Health sector has challenges of inadequate health personnel with a doctor patient ratio of 1:11875 compared to WHO's recommendation of 1: 600. The county has a high maternal death rate of 304 per 100000 compared to the national rate of 135 per 100000 and a high malaria prevalence with 31% of outpatients diagnosed with malaria, (KNBS, 2015).A survey done in 2010 revealed that there was less funding for operations and maintenance in hospitals which lead to meagre quality of care, demotivated staff and reduced service use andobtainability. Patients in public hospitals paid bribes to access health services, receive improved quality services, to reduce waiting times and to obtain drugs and meals. The survey also found out that hospitals don't have sufficient medical supplies with 38.6% of patients being asked to buy their own drugs and equipment to access healthcare, (KACC, 2010).

1.2 Research Problem

Service sector is the fastest growing sector accounting for 70 percent of the GDP and employment in most western economies, (Johnston, 1994). Service quality is acrucialelement for viable competitive advantage, diversification and distinction in the service sector. Service quality is an imperative strategy to achieve competitive edge, long-term profitability, survival and success in the current competitive business environment, (Chowdhary, 2007). Its implementation and management is unavoidable for all firms to ensure all stakeholders get value for their money. Investment in service quality improves business performance significantly with increase in sales volume, sales margin and return on investment, (Wiele, Boselie &Hesselink, 2002).

Healthcare system in Kenya aims to provide patient centered care and improve quality of care by ensuring health interventions are structured around patient requirements and anticipations.In Mombasa County patients suffering from minor ailments travel for long distances to the county referral hospital due to lack of equipment, personnel and drugs at health centers though the average distance to healthcare facilities is 0.55km, (GoK, 2013).

Service quality is adopted and practiced in Mombasa County public hospitals with provision being hindered by lack of adequate financial resources, insufficient healthcare personnel, low staff motivation, poor communication, and lack of senior management support, (Mbuthia, 2013). Poor service quality in public hospitalslead to a high staff turnover and low morale affecting provision of 24 hour services compromising patient care and increasing operations cost due to inefficiencies, (Owino & Korir, 1997).

A study in Turkey comparing service quality in public and private hospitals established that patients in private hospitals werecontent with quality of services offered compared to those in public hospitals, (Taner &Antony, 2006).In UK patient's perceptions did not meet their anticipations in all five dimensions, service tangibles, service reliability, service assurance, service empathy and service responsiveness with service reliability being perceived as the worst feature of the hospital, (Youssef, Nel & Bovaird, 1995).At KNH a study found out that technology needed to be adopted to make processes more efficient and to improve communication, and a sufficient number of highly trained and proficientpersonnel employed to improve service quality, adherence to treatment, customer satisfaction and reduce waiting time, (Wanjau, Muiruri & Ayodo, 2012). At Karen Hospital, Kenya customer perception of service quality and employees had a significant influence on performance compared to cost of services, (Maina, 2015). In public hospitals patients are not satisfied with waiting times, access and interpersonal skills of clinical officers, (Karanja, 2012).

Healthcare managers need to identify key determinants of patient contentment and service quality to ensure theydeliver high quality of services at reasonable cost, (Pakdil & Harwood, 2005). Service quality perception, technical quality and functional quality lead to a substantialeffect on operational performance in hospitality industry in Kenya. This study suggested that future research should be done to find out the relationship between service quality and operational performance from consumers' point of view, (Inyo, 2013). Studies in Kenya's healthcare system suggest services offered by public hospitals are not reliable nor responsive to customers' needs. Its' imperative for public hospitals to determine service quality aspects critical for patients' satisfaction and their relationship with operational performance from consumers' point of view to improve efficiency, productivity and meet their customers' needs.Research on service quality reveals that it has a positive effect on operational performance. Studies linking specific service quality

dimensions to operational performance are limited therefore this study sought to fill the gap by linking specific service quality dimensions to operational performance. This study investigated perception of service quality dimensionsby patients and their relationship with operational performance of public hospitals from customers' point of view. The study sought to answer two research questions: Whatis the perception of service qualityby patients? What relationship exists between service quality dimensions and operational performance?

1.3. Research Objectives

The objectives of this study were,

i. To establish perception of service quality by customers in public hospitals in Mombasa County.
ii. To determine the relationship between service quality dimensions and operational performance of public hospitals in Mombasa County.

1.4 Value of Study

The findings of this research study will contribute to present body of knowledge in the theory of operations management to help understand better how service quality affects operational performance of organizations. Scholars and other researchers may use the discoveries of this study to pinpointadditional research areas. Other researchers who would like to carry out studies in the same or interrelatedsubjects may use the findings as a reference point.

The study findings will help hospital managers to understand service quality dimensions important to customers, and dimensions that ought to be put in place to achieve desired levels of operational performance. The implementation of the recommendations on relevant service quality dimensions will enhance efficiency and effectiveness and improve hospital performance.

The study findings will guide policy formulation for public and private hospitals to enhance provision of superior quality services to their customers. Policy makers may use the findings to come up with universal strategies that align service quality to the operations strategy of the organization. The policy makers at the national and county governments could use the studyresults to formulate service quality policies which can guide investment in public healthcare.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section comprises literature review on service quality concept, service quality dimensions and operational performance. Theories on service quality supporting this study and empirical findings of studies related to service quality and operational performance have been reviewed.

2.2 Theoretical Review

Quality management theory has acknowledgedseveral quality management ideals. These ideals have been documented, empirically analyzed and investigated to find out how they affect organizational performance. Service quality can be conceptualized in three theories; customer satisfaction, attributeand interaction theory, (Chase & Bowen, 1991).

2.2.1 Customer Satisfaction Theory

This theory defines quality of services as a discrepancy between customer anticipations and theirperception of quality of services received. Customers' expectations are the basis for satisfaction and perform a pivotal role in forming perception of quality of service received. Consumers' create their own individual benchmark of expectations and rate their satisfaction from perception of service quality received. This theory is customer focused with the customers' definition of quality being the most important, (Berry et al, 1985).

Customer satisfaction has a great and more consistent influence on purchase intentions, loyalty and is key to endurance and success of all organizations in the current competitive environment. Organizations have to strive to achieve excellent quality image but avoid raising expectations to unrealistic levels, which may lead to increases in preliminary business sales but fosters disappointments and discourages future purchases,(Cronin & Taylor, 1992).

2.2.2 Attribute Theory

This theory assumes that stability of a cause determines expectancy shift. The theory states that if conditions of service quality process are expected to remain the same then outcomes experienced in the past will be anticipated in the future; with success increasing

expectation of future success and failure strengthening expectation of subsequent failures, (Weiner, 1985).

The theory applies product quality framework to services to determine quality of service delivery. When product failure is perceived to be instigated bysteady causes, consumers anticipate future dissatisfaction but if perceived to be due to unstable causes, then subsequent satisfaction is expected with future purchases. Management has a significant influence on service quality as they determine inputs of the service delivery system that define the degree of quality of services of the firms' products and services. Organizations have to identify relative weights of service process attributes from customers' point of view as a change in an attribute affects operational performance, (Verma & Thompson, 1999).

2.2.3 Interactive Theory

This theory defines service quality as a collective gain amongst all participants in the service encounter. Quality services are offered whenthe customers and employees needs are satisfied. Customers' perspective of service quality is a sum of aggregated net significance of benefits perceived in the service encounter which encompasses functional quality and performance delivery. Service quality is frequently used to refer to functional quality where service performance and output is easily measured, (Klaus, 1985

Satisfaction of internal customers is a source of excellent quality since they are enabled to perform their tasks more effectively and efficiently to achieve external customer satisfaction and retention. Employees and managers of firms associate service quality with physical and technical specifications and interpersonal aspects of service. This theory places emphasis on production process and customer focus, (Zairi, 2000).

2.3 Service QualityModels and Dimensions

Service quality is multidimensional concept with customers' expectations concerned with multiple aspects of the service package rather than one aspect. Management needs to understand determinants of service quality for their market segments to improve perceived service quality, (Johnston, 1994). Service quality can be measured using different modelswhich are anchored by various dimensions.Grönroos, (1984) proposed a model to assess quality of services using technical quality, functional quality and corporate image dimensions. Parasuraman et al. (1988) proposed the gap model and developed the SERVQUAL scale that measures service quality using ten service quality

dimensions, which they operationalized into five dimensions after extensive explorative research and empirical testing to include tangibles, reliability, responsiveness, empathy and assurance.

SERVPERF modelproposed by Cronin and Taylor (1992) is founded on the five dimensions of SERVQUAL and uses perceptiononly questions. Brady and Cronin (2001) developed a model to measure quality of services using interaction quality, environment quality and outcome quality dimensions. This study will used SERVPERF model which was found to be more efficient in explaining variation of service quality and purchase intentions in several service industries compared to SERVQUAL. The five SERVQUAL dimensions tangibles, responsiveness, reliability, empathy and assurance wereused, (Cronin & Taylor, 1992).

2.3.1 Tangibles Dimension

Tangibles include attributes pertaining to physical evidence of the service which includes physical facilities, equipment, look of the staff, other customers in the service facility and physical representation of the service. Services are intangible therefore consumers look for noticeableconfirmation of the offerings they will receive in the physical environment to form expectations. Customers look for cues such as physical design, décor, signage, stationary and demeanor of staff and other customers to help establish the firms' image and form customer expectations, (Berry et al, 1985).

Physical appearance of the employees, other customers and physical facilities influence customers' attribution and satisfaction in communicating and satisfying customers. Firms have to ensure they have comfortable and attractive physical facilities, professional dressing and etiquette among employees and use up to date equipment that is appealing to customers in appearance, quality and applicable to nature of service being offered to satisfy their customers' needs and meet their expectations, (Olsen & Johnson, 2003).

2.3.2 ResponsivenessDimension

Responsiveness is the readiness to offer assistanceto consumers andswift services. It entails handlingconsumer'swishes, queries and complains swiftly, attentively and in a timely manner. The organization needs to communicate with its customers how long they will wait for their queries and concerns to be solved,meet the set time lines and ensure have flexible operations activities to accommodate special requests by their customers.

For success organizations need to assess responsivenessfrom the consumers' perspective as opposed to the firms' perspective to meet their customers' needs and anticipations, (Parasuraman et al, 1988)

The firm should have appropriate and convenient communication channels that provide clear and accurate information to customers' queries and complaints. The turnaround time of queries and complains should be minimized to ensure timely responses and employees should have flexible and versatile skills to accommodate and respond adequately to special requests from customers, (Chowdhary & Prakash, 2007).

2.3.3ReliabilityDimension

Reliability is the capability of the firm to executeanticipated service dependably, accurately and consistently. Firms should perform its services right the first time, honors its promises, offers services at designated time, within convenient hoursand ensure they are dependable in handling customers' problems and concerns. The organization should provide accurate information to its customers, to avoid wasting time and resources correcting mistakes and to instill consistency in all its processes, (Zeithaml, Berry & Parasuraman, 1993).

Reliability is the most critical dimension for predicting service quality in all firms as all consumers desire to transact with firms that meet their promises consistently. Reliability has a significanteffect on customer satisfaction, loyalty and perception of service quality, and a failure has detrimental effect on service quality and speed of delivery, (Kumar et al, 2010). Operation processes that deliver materials and information on time are more effective in saving time, money, ensure stability of operations and quality which are critical for choice of products and services by customers, (Slack et al, 2010).

2.3.4 AssuranceDimension

Assurance is the knowledge and courtesy of the personnel and their aptitude to instill trust and confidence. The level of knowledge, skills and proficiency of personnel in handling complaints and concerns makes customers feel safe and their politeness and respect in handling every transaction instills trust, (Parasuraman et al, 1988).

Trust in the organization and its capabilities are essential to make consumers comfortable enough to establish a relationship with the firm whichis essential to maintain market

shares and foster loyalty.Assurance is critical in high provider involvement services as customers' value safety and trust in dealing with the organizations. Instilling confidence incustomers with the firm offerings ensures loyalty and customer satisfaction which is a pre requisite to long term growth and success of all firms, (Zeithaml et al., 1993).

2.3.5 EmpathyDimension

Empathy is the compassionatepersonalizedattention the firm offers its consumers. Consumers are treated uniquely and special attention is paid to their specific preferences, needs and wants and they are handled comprehensively. Employees should handle customer queries with attention to detail, concern and understanding of the customers' needs and motivations, (Parasuraman et al, 1988).

Small firms use empathy to delivertailored services as a competitive edge over bigger firms. Understanding customers' needs and efficient communication channels is essential in building relationships with the customers which is vital for the firm's survival as compared to transaction marketing. Personal touches, capability to know what the customers need and expect;and readiness to go the extra mile by employees lead to high levels of service quality perception, (Chowdhary & Prakash, 2007).

2.4 Operational Performance Metrics

Operational performance has a significant impact on organizational performance therefore organizations need ways of assessing performance of its operations function and operations management. Operational performance measures include customer satisfaction, quality, speed of delivery, productivity, flexibility, cash flow, market share, innovation and learning.Quality is consistent conformance to customer expectations. Quality is a fundamental measure since it's a major influence on customer satisfaction and loyalty. Speed of delivery is critical in choosing goods and services for customers and its' greatly affected by speed of decision making and flow of materials and information in all operations involved in product or service production, (Slack et al, 2010).

Flexibility is a measure of how a firm can vary its operations activities to cope with unexpected circumstances and offer individual attention and it determines the agility of firm operations which saves time, speeds response, and ensures dependability. Productivity is a measure of firms' operations activities ability toreduce cost of inputs

while maintaining level of its output which reduces operations cost, increases firm profitability and reduces cost to customers, (Slack et al, 2010). Customer satisfaction is an overall measure of how firms operations produce products and services that surpass their consumers'desires and expectations. Its critical determining market shares and cash flows and its' affected by quality, flexibility, speed and productivity of firm operations, (Kumar et al, 2010).

2.5 Empirical Review

An empirical study in 37 service firms in the USA assessing common operations practices and their impact on organization success found that effective operational practices in service quality and productivity had a great impact on success of service firms. Timely, prompt and consistent response to customers' needs was a pre requisite to long term growth and success of all service firms, (Vargas & Manoochehri, 1995). A study exploring the relationship between operations strategies and operations activities in 34 service sectors in Australia established that firms that perform better had a strong correlation between their operations strategy and operations activities, with different operations strategies having different supporting operations to maximize performance, (Prajogo & McDermott, 2008).

A study in the UK investigating what patients anticipate before admission and their perception after releasefrom hospital found that service reliability and service assurance were the most important dimensions for patients. Patients' perceptions did not meet their anticipations in hospital tangibles, service reliability, service assurance, empathy of services and service responsiveness with service reliability being perceived as the poorest feature. Disappointment in service reliability had adamaging effect on overall perception of quality of services which was perceived to be fair, (Youssef et al, 1995). In Mombasa County service quality dimensions have been adopted in public healthcare facilities with competence being the most practiced and communication the least practiced, (Mbuthia, 2013).

A study in Turkey examining the difference in service quality in private and public hospitals established that patients in private hospitals were content with quality of services offered than those in public hospitals. Contentment with doctors and hospital charges were the main determinants of service quality for public hospitals with lack of communication between service providers and patients in public hospitals having

detrimental effects on service quality, (Taner & Antony, 2006). Chahal and Kumari (2012) assessed the relationship betweenquality of services and public hospitalperformance and found a significant correlationbetween physical environment quality and interaction quality with waiting time, patient contentment, patient loyalty and image of public hospitals. Functional quality had a greater influence than technical quality on operational performance of tour operators in Kenya. Service quality perception, technical quality and functional quality had a substantial influence on operational performance, (Inyo, 2013).

In Qatar hospitality industry, responsiveness, reliability and tangibles are the most valued dimensions by customers compared to assurance and empathy. Improving service quality would lead to cost reduction, process efficiency and waste reduction which increases customer satisfaction and return on investments, (Nair, 2016). Poor customer service, poor response time and high waiting times have detrimental effects on perceived service quality of firm offerings which affects customer satisfaction and operational performance of the organization, (Masson, Jain, Ganesh & George, 2016).

Customer perception of service quality and employees had a strong influence on hospital perfomance compared to effect of cost of services. Cost of services was percieved to be high for the patients compared to other private hospitals with insufficient highly skilled employees affecting efficiency of operations, customer satisfaction and loyalty at Karen hospital, Kenya, (Maina, 2015). In KNH provision of service quality was hindered by insufficient funding and lack of proper communication channels. Adoption of technology was deemed to be essential to improve process efficiency and commmunication to enable efficient and effective service quality provision by reducing waiting time for laboratory and imaging results and providing clinicians information required for desion making promptly, (Wanjau et al, 2012). Patientsare not satisfied with outpatient services provided by clinical officers in the public hospials in Kenya. Challenges affecting provision of care is access of clinical officers, waiting time and their interpersonal and communication skills with patients visiting hospitals more frequently highely dissatisfied with the experience of services offered, (Karanja, 2012).

2.6 Summary of Literature Review

According to the literature reviewed in this section, firms are capable of achieving operational performance by focusing on the service quality dimensions that are critical to

perception of service quality by customers. Understanding these service quality dimensions enables organization to satisfy the needs of their customers and meet their performance objectives. Firms need to determine customers' expectation of their products and services and how they expect to receive the firm offerings as this influences customers' perception of service quality. Customer satisfaction with firm offerings leads to loyalty and good corporate image which aids firms in attaining a competitive advantage over other firms.

2.7 Conceptual Framework

The study investigated how aspectsof quality service; reliability, tangibles, assurance, responsiveness and assurance are perceived by patients and their relationship with operational performance of public hospitals in Mombasa County.

Figure 1 below shows the relationships among the key variables that were used in the study.

Independent Variables

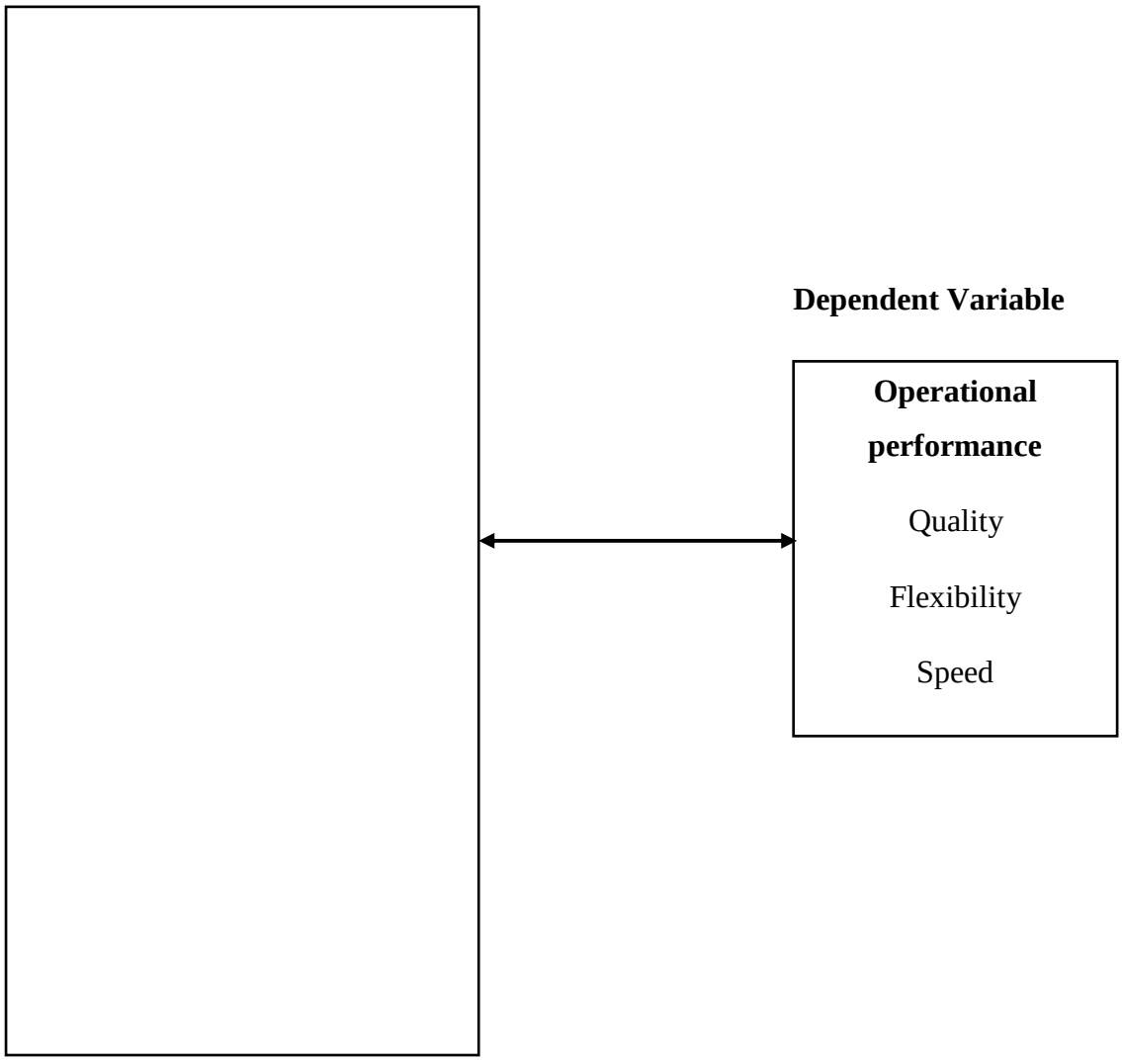

Figure 2.1 Conceptual Framework for the Study

Source: Author (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section presents the research methodology that was used in conducting the study.It covers the research design, target population, sampling design, data collection methods and data analysis techniques.

3.2 Research Design

The study adopted a cross-sectionaldescriptive survey research design. Asurvey research design is a method of collecting data or information to describe the characteristics of the population as reported by individuals in the population of study. A descriptive research is designed to provide information on a situation as it exists at the present moment. A cross sectional survey collects data to make inference about the population of interest at a given point in time (Gay, Mills & Airasian, 2006).

3.3 Population of Study

The population of study was 24,688 which was the average monthly cumulative patients seen in the four public hospitals in Mombasa County. These included a tier 5, a tier 4 and two tier 3 hospitals, (Ref. Appendix II). These hospitalswere appropriate for the study since they providedcomprehensive and integrated curative and rehabilitative care and have different cadres of personnel with different specializations attending to the patients.(CGM, 2016).

3.4. Sampling Design

Proportionate stratifiedrandom sampling was used to determine the sample size.Stratified random sampling is a technique of sampling that comprisespartition of the population to smaller clusters called strata based on their characteristics and attributes.Proportionate sampling is a sampling technique where the sample size selected from each subgroup is proportional to its size in the entire population, (Gay et al., 2006).The population of study was from three different levels of hospitals which offered different levels of care and specialization to the population. Proportionate sampling was used to give the same probability for picking any patient in any of the hospitals.

To determine the sampling size the formula below was used;

$$n = \frac{Z^2 * P(1-P)}{ME^2} = \frac{(1.96)^2 * 0.35 * 0.65}{0.0025} = 350$$

Where n is the sample size

Z is (1.96), a 95% confidence level

ME is a 5% confidence interval

P is a percentage of population in decimal (35%),(Israel, 1992)

A total of 350 respondents were sampled from the 24688 population using the same sampling percentage of 1.42% of the average monthly cumulative patients for every hospital.

Table 3.1Target Sample Calculation

Hospital	**Average Monthly Cumulative Patients**	**Sampling Percentage**	**Target Sample**
Coast General Hospital	19700	1.42%	280
Port Reitz County Hospital	2325	1.42%	33
Tudor Sub-County Hospital	1225	1.42%	17
Likoni Sub-County Hospital	1438	1.42%	20

Source: Author(2016)

3.5 Data Collection

The study used primary data. The data was collected using a structured questionnaire (Appendix I). The questionnaire consisted of three sections which included demographic information, service quality, and operational performance. The questionnaire comprised of closed ended and open ended questions. Data on demographic information and service quality was collected using closed ended questions while data on operational performance was collected using closed ended and open ended questions.The questionnaireswere distributed through hand delivery and self-administered by paper and pencil method. The questionnaire consisted of perception only questions of the SERVQUAL scale using a five likert scale. The questionnaire was filled by every 5^{th} inpatient on discharge and 10^{th}outpatient on receipt of medication from the pharmacy.

3.6 Data Analysis

The data collected was cleaned, validated, and edited for accuracy, uniformity, consistency and completeness. Descriptive statistics, mean and standard deviation were used to determine the perception of quality of services by consumers. Correlation was used to investigate the relationship between quality of services and operational performance.

The regression model was as follows;

$$\mathbf{Y= \beta_0+ \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5+ \varepsilon}$$

Where:

Y = Operations Performance Index (dependent variable)

β_0 = Constant

β_1, β_2, β_3, β_4 and β_5 are coefficients of tangibles dimension, reliability dimension, responsiveness dimension, assurance dimension and empathy dimension respectively.

X_1 = Total Value of Tangibles dimension score

X_2 = Total Value of Reliability dimension score

X_3 = Total Value of Responsiveness dimension score

X_4 = Total Value of Assurance in dimension score

X_5 = Total Value of Empathy in dimension score

ε = Error term

β_1, represents the contribution of tangibles dimension variable, β_2 represents the contribution of reliability dimension variable, β_3 represents the contribution of responsiveness dimension variable, β_4 represents the contribution of assurance dimension variable and β_5 represents the contribution of empathy dimension variable to the overall operational performance of public hospitals in Mombasa County.

The multiple correlation coefficient R was used to test the strength of the relationship between the independent variables and dependent variable. A positive correlation of between 0.3 and 1 is expected on analysis of results. Coefficient of determination Rsquaredwas used to explain how much the variability of independent variables of service quality lead to variation in the dependent variable operational performance, (Hair, 2009).

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This section presents analysis of data collected and the study results. The demographic information of respondents was analyzed, followed by analysis of perception and experience of the various service quality dimensions and finally a correlation test done to establish the relationship between quality of services and operational performance.

4.1.1 Response Rate

Table 4.1: Response Rate

Response	Frequency	Percentage
Responded	252	72
Not responded	98	28
Total	**350**	**100**

Source: Research Data(2016)

The study targeted a sample of 350 respondents,252 out of 350 sampled respondents completely filled in the questionnaire. This was a72% response rate as showed in Table 4.1. This was considered a good representative of the sampled population.

4.2 Demographic Information

4.2.1 Gender of the Respondents

Table 4.2: Gender Composition

Gender	Frequency	Percentage
Female	147	58
Male	105	42
Total	**252**	**100**

Source: Research Data (2016)

It was evident from, Table 4.2 that there were more females as shown by 58% than males shown by 42% who visited the hospitals during the research period.This shows that both genders were represented in the study however; there was gender disparity as it is evident

that majority of the patients who visited the public hospitals in Mombasa County were females.

4.2.2 Age of Respondents

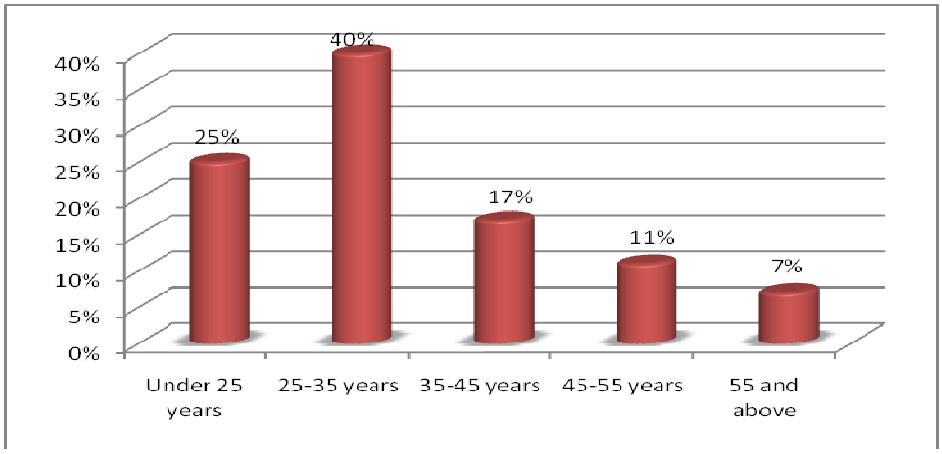

Figure 4.1 Distribution of Respondents by Age

Source: Research Data (2016)

The results in Figure 4.1 above show that the majority of the respondents 40%, were between 25 and 35 years, 25% were under 25 years, 17% were between 35 and 45 years, 11% were between 45 and 55 years, while 7% were 55 and above.This indicates that majority of the patients who visited public hospitals were of youthful age.

4.2.3 Number of Visiting Times

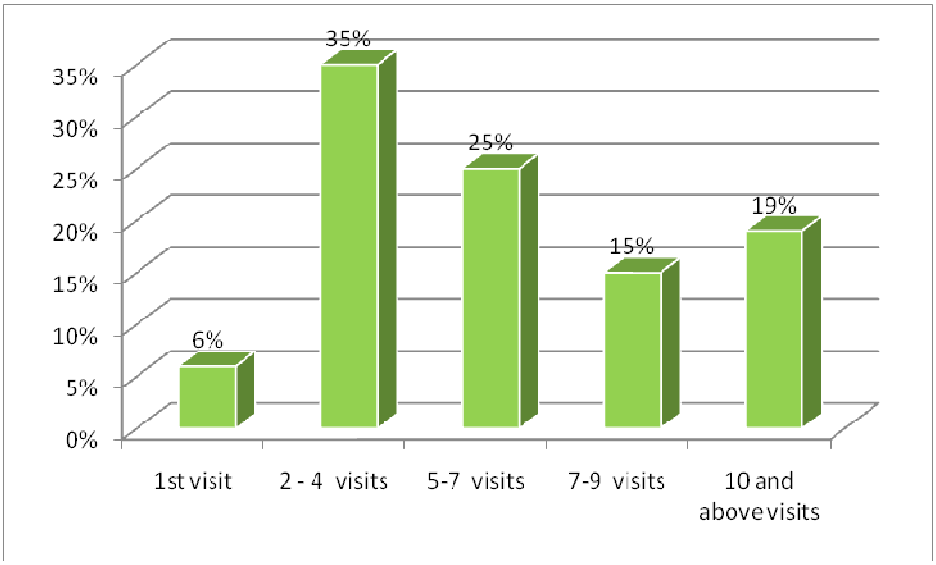

Figure 4.2 Distribution of Respondents by Number of Visiting Times

Source: Research Data (2016)

When the number of times respondents had visited the hospital was assessed, 35% had visited the hospital 2 to 4 times, 25% had visited the hospital 5 to 7 times, 19% had

visited the hospital 10 times and above, 15% had visited the hospital 7 to 9 times while 6% had visited the hospital once as shown in Figure 4.2.

4.2.4 Respondents Monthly Income

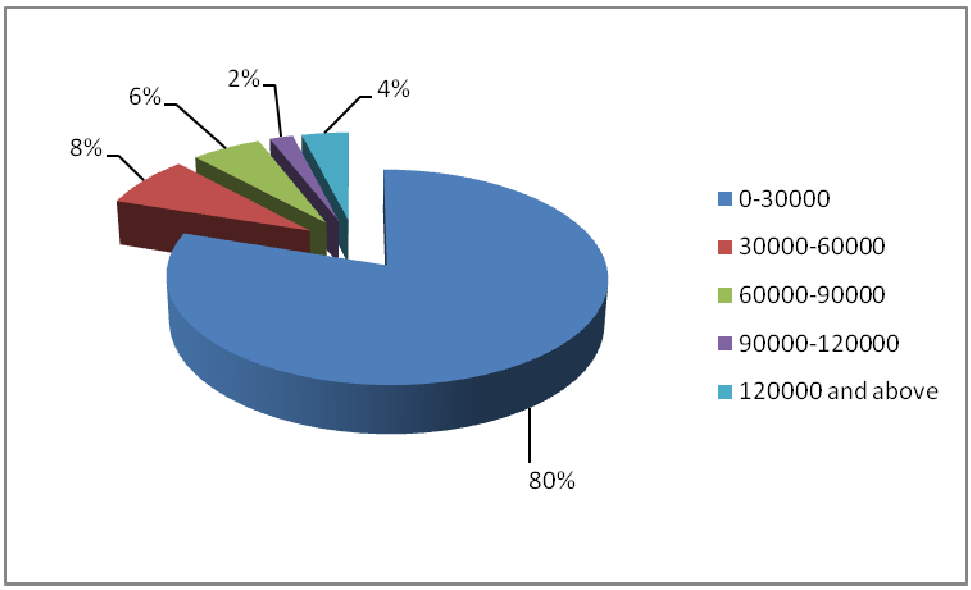

Figure 4.3 Composition of Members by Their Monthly Income

Source: ResearchData (2016)

The study determined the respondents' monthly income as shown in Figure 4.3 above, 80% who were the majority earned between 0 and 30,000 shillings, 8% earned between 30,000 and 60,000 shillings, 6% earned between 60,000 and 90,000 shillings, 4% earned 120,000 shillings and above while 2% earned between 90000 and 120,000 shillings and above.

4.3 Service Quality Dimensions

The study sought to find out the perception of quality of services offered by public hospitals and the relationship between service quality and operational performance. Service quality dimensions;hospital tangibles, service reliability, service responsiveness, empathy of services and service assurance were used to evaluate service quality perception. The respondents evaluated their perception of quality of services using a 5 Likert scale of 1 (strongly disagree) to 5 (strongly agree) the degree to which they agreed with the statements of each dimension.The scores "strongly agree" and "agree" were denoted by mean score corresponding to 3.6 to 5 on the continuous Likert scale (<great extent<5). The scores of 'not sure' were corresponding to 2.6 to 3.5 on the Likert scale

(2.6 <neutral<3.5). The score of “disagree” and “strongly disagree” were corresponding to 1.0 to 2.5 on the Likert Scale (1.0< No extent <2.5).

4.3.1 Hospital Tangibles

The respondents rated their perception of appearance of physical facilities of the hospital, up to date equipment, personal appearance of medical staff and visually appealing materials for provision of services.

Table 4.3Hospital Tangibles

Tangibles	**Mean**	**Std. Dev**
The hospital has up to date physical facilities e.g. equipment, X-ray department, laboratories	1.57	.957
The physical facilities of the hospital are visually attractive e.g. reception area, wards and outpatient department	1.36	.917
Employees are neat in appearance e.g. well groomed, clean/ smart uniform	2.60	.849
Materials associated with services are visually attractive e.g. documentation, directions	1.62	.934
Total	**7.15**	**3.657**
Average	**1.79**	**0.91**

Source: Research Data (2016)

Table 4.3 shows that, perception of tangibles in the hospital was rated to a low extent as indicated by an overall mean of 1.79. The respondents perceivedemployees were neat in appearance and well groomed to a moderate extent (M=2.6, SD=.849) the materials associated with services were visually attractive to a low extent (M=1.62, SD=.934), physical facilities of the hospital as visually attractive to a low extent (M=1.36, SD=0.917), the hospital had up to date facilities to a low extent (M=1.57, SD=0.957), The results demonstrate that patients are not content with the physical facilities in the hospital.

4.3.2 Service Reliability

The respondents rated their perception of hospital dependability, keeping their promises and timelines, service performance the first time, maintaining accurate records and their interest in solving customers’ problems.

Table 4.4 Service Reliability

Reliability	Mean	Std. Dev
The hospital provides service at the time promised e.g. time of operation, investigation, medicine food	2.19	1.140
Hospital shows sincere interest in solving patients' problems	1.92	1.008
Hospital performs the service right the first time	2.17	1.097
Hospital maintains accurate records	1.93	.885
Hospital is dependable, it provides all services as promised	2.21	1.101
Total	**10.42**	**5.231**
Average	**2.08**	**1.05**

Source: ResearchData (2016)

The study found that customers perceive the hospitals services to be unreliable, with a total mean of 2.08. The hospital was dependable, it provided all services as promised to a low extent (M=2.21, SD=1.101), the hospital provided services at the time assured e.g. time of operation, investigation, medicine food to a great extent (M=2.19, SD=1.14), the hospital performed the services right the first time to a great extent (M=2.17, SD=1.097),the hospital showed sincere interest in solving patients' problems to a low extent (M=1.92, SD=1.008) andcustomers perceived the hospital maintained accurate records to a great extent (M=1.93, SD=.885). The results show that patients perceive service reliability to be poor.

4.3.3 ServiceResponsiveness

The respondents rated staff willingness to help patients, responding to patients' requests and provision of swift service by the hospital as below in table 4.5.

Table 4.5 Service Responsiveness

Responsiveness	Mean	Std. Dev
Staff tell patients precisely when services will be performed	1.99	1.129
Staff give prompt service to patients	1.96	1.116
Staff are always willing to help patients	1.96	.950
Staff readily respond to patients requests	2.12	1.065
Total	**8.03**	**4.26**
Average	**2.01**	**1.07**

Source: ResearchData (2016)

The study established that experience and perception of the hospitalresponsiveness was rated to a low degree as indicated by a mean score of 2.01. The respondents were in agreement that;the staff readily responded to patients requests to a low extent (M= 2.12, SD=1.065), the staff told patients exactly when services were to be performed to a low extent (M=1.99, SD=1.129),staff were always willing to help customers to a low extent (M=1.96, SD=.95),the staff gave prompt service to patients to a low extent (M=1.96, SD=1.116).The results demonstrate that patients were not content with responsiveness of hospital services to their needs.

4.3.4 Service Assurance

The respondents ratedemployees' ability to instill confidence and trust, their courtesy and their knowledge to answer questions as below in table 4.6.

Table 4.6 Service Assurance

Assurance	**Mean**	**Std. Dev**
Employees instill confidence and trust in patients	1.96	.933
Patients feel safe when receiving medical treatment	1.62	.811
Employees are courteous	1.48	.953
Employees have the knowledge to answer patients questions	2.61	.996
Total	**7.67**	**3.693**
Average	**1.92**	**0.92**

Source: ResearchData (2016)

The study found that patients' perception of service assurance in the hospital was rated to low degree as indicated by an average score of 1.92.The study found thatthe employees had the knowledge to answer patients questions to a moderate extent (M=2.61, SD=.996),employees instilled confidence and trust in patients to a low extent (M=1.96, SD=.933),patients felt safe when receiving medical treatment to a low extent (M=1.62, SD=.811),andemployees were courteous to a low extent (M=1.48, SD=.953). The findings show patients were not content with service assurance.

4.3.5 Empathyin Services

The respondents rated the hospitals operating hours, employees' ability to give patients individual attention, having patients' best interest at heart, understanding their requirements and ability to keep them informed as below in table 4.7.

Table 4.7 Empathy in Services

Empathy	**Mean**	**Std. Dev**
Employees give patients individual attention	1.85	.968
Employees have patients best interest at heart	2.02	.957
Employees understand specific needs of patients	1.92	.819
Employees listen to patients and keep them informed	1.72	.627
The hospital has convenient operating hours for patients	1.84	.807
Total	**9.35**	**4.178**
Average	**1.87**	**0.84**

Source: ResearchData (2016)

The study observed that experience and perception of empathy in the hospital was rated to low degree as indicated by a mean score of 1.87in that; employees had patients best interest at heart to a low extent (M= 2.02, SD=.957), employees understand specific needs of patients to a low extent (M=1.92, SD=.819), the employees gave patients individual attention to a low extent (M=1.85, SD=.968),the hospital had convenient operating hours for patients to a low extent (M= 1.84, SD=.807), and employees listened to patients and kept them informed to a low extent (M=1.72,SD=627). These findings show that patients perceived empathy of services to be poor.

4.3.6 Dimensional Ranking of Service Quality

Table 4.8 Ranking of Service Quality Dimensions

Service Quality Dimension	Mean	Std. Dev
Service Assurance	2.08	1.05
Empathy in services	2.01	1.07
Service Reliability	1.92	0.92
Service Responsiveness	1.87	0.84
Hospital Tangibles	1.79	0.91
Total	**9.67**	**4.79**

Average	**1.93**	**0.96**

Source: ResearchData (2016)

Data from table 4.3 to 4.7 was extracted to form Table 4.8. The overall service quality was rated to a low extent with a mean of 1.93 which indicates service quality is poor. The aggregate means of the dimension were tabulated in a decreasing order. The standard deviation was tabulated to show disparity of respondents. According to the tabulated findings above, hospital tangibles, service assurance, service reliability, empathy of services and service responsiveness were perceived to be poor. Patients were not content or satisfied with hospital service quality and hospital tangibles was perceived as the worst feature of service quality.

4.4 Operational Performance

The respondents rated operational performance aspects of quality of services received, flexibility of services and speed of service delivery. Speed of service delivery was evaluated using waiting time for consultation and laboratory tests results waiting time as shown in figure 4.4 and 4.5.

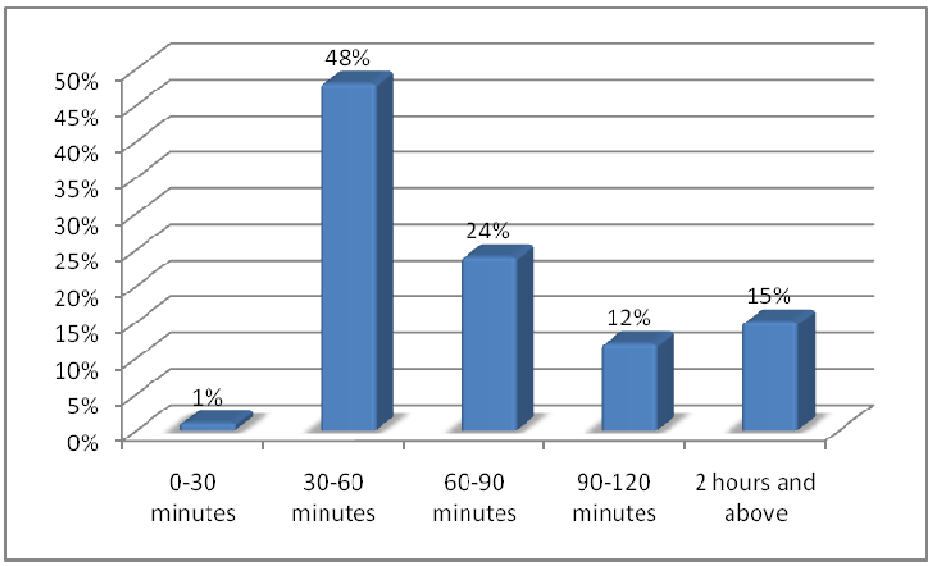

Figure 4.4 Waiting Time for Consultation

Source: ResearchData (2016)

According to Figure 4.4, 48% of the respondents who were the majority had waited for 30 to 60 minutes to see the doctor, 24% had waited for 60 to 90 minutes to see the doctor, 15% had waited for 2 hours and above to see the doctor, 15% had waited for 90 to 120 minutes to see the doctor and 1% had waited for 0 to 30 minutes to see the doctor.

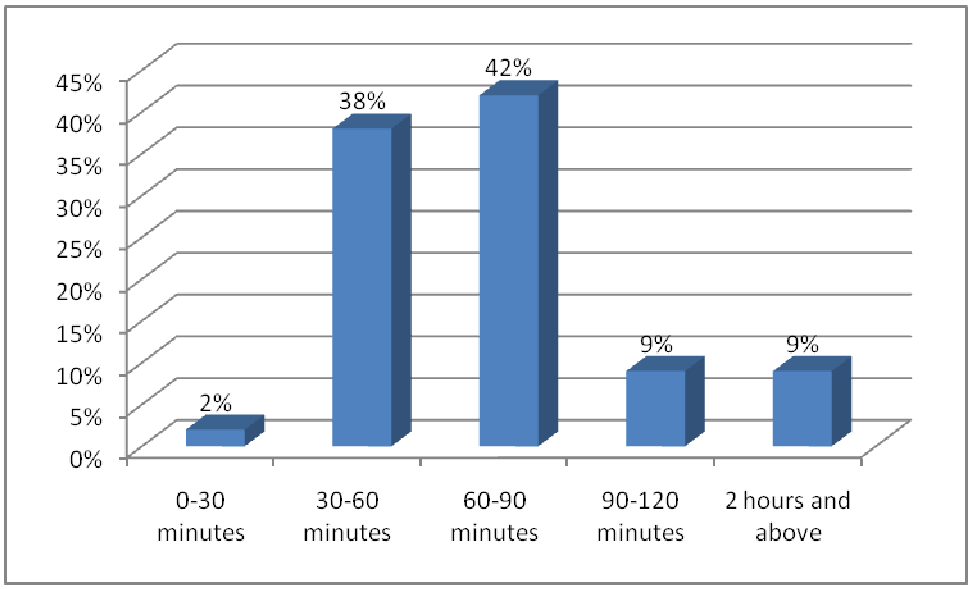

Figure 4.5 Waiting Time for Laboratory Results

Source: ResearchData (2016)

According to figure 4.5,42% of the respondents who were the majority had waited for 60 to 90 minutes for laboratory results, 38% had waited for 30 to 60 minutes for laboratory results, 9% had waited for 90 to 120 minutes, 9% had waited for 2 hours and above for laboratory results and 2% had waited for 0 to 30 minutes.

Table 4.9 Relationship between Waiting Time and Service Quality

		Waiting Time for Consultation	Waiting Time for Laboratory Results
Service Reliability	Pearson Correlation	-0.632**	-0.351**
	Sig. (2-tailed)	0.000	0.000
	N	252	252
Empathy in Service	Pearson Correlation	-0.468**	-0.211**
	Sig. (2-tailed)	0.000	0.000
	N	252	252
Service Responsiveness	Pearson Correlation	-0.667**	-0.354**
	Sig. (2-tailed)	0.000	0.000
	N	252	252
Hospital Tangibility	Pearson Correlation	-0.454**	-0.359**
	Sig. (2-tailed)	0.000	0.346
	N	252	252
Service Assurance	Pearson Correlation	-0.506**	-0.147*
	Sig. (2-tailed)	0.000	0.000
	N	252	252

** Correlation is significant at p <0.01 significance level (2-tailed)

* Correlation is significant at p <0.05 significance level (2-tailed)

Source: Research Data (2016)

The findings in table 4.9 shows that waiting time to see the doctors has a negative significant relationship with all service quality dimensions.There is a negative and significant relationship between service reliability, service responsiveness, service assurance, empathy of services and hospital tangibles with waiting time to see doctors and for laboratory results. Waiting time to see the doctor has more effect on service quality perception than the waiting time for laboratory results.

Table 4.10Operational Performance

		Mean	Std. Dev
The hospital offers excellent quality services		2.03	.881
The services offered by the hospital were satisfying and met my needs		1.95	.802
Better service quality can reduce waiting time to see the doctor and for laboratory and X – ray test results		4.11	1.112
I will recommend the use of the hospital services to my family and friends		1.89	.722
I received all services required for my treatment within the hospital	**Drugs**	1.55	.503
	X-ray tests	2.61	.476
	Laboratory tests	2.17	.421
Better service quality can make the hospital run smoothly		4.25	.688
The hospital offers unique and innovative services		1.93	.773
The cost of services in the hospital was reasonable and fair		1.93	.839
Better service quality can improve process efficiency		4.18	.649
Total		**28.6**	**7.866**
Average		**2.6**	**.7151**

Source: ResearchData (2016)

The findings in Table 4.10 show that the hospitals operational performance was low (M=2.6, SD=0.71) in that; the hospital offers excellent quality services to a low extent (M=2.03, SD= 0.881), the services offered were satisfying and met the patients'needs to a low extent (M=1.95, SD=0.802), the hospital offers unique and innovative services to a

low extent (M=1.93 , SD=0.773), the cost of services in the hospital were reasonable and fair to a low extent (M=1.93, SD= 0.839).

The patients could recommend the use of the hospital services to their family and friends to a low extent (M=1.89, SD=0.722). The hospital experienced severe shortage of drugs (M=1.55, SD= 0.503) and laboratory test (M=2.17, SD= 0.421) but the access to x-ray tests was moderate (M=2.61, SD=0.476).Patients were in agreement that; better service quality can make the hospital run smoothly (M=4.22, SD=0.671), better service quality can improve process efficiency (M=4.18, SD=0.649 and that better service quality can reduce waiting time to see the doctor and for laboratory and x – ray test results (M=4.11, SD=1.112).

The findings above indicate that patients were not satisfied or content with the quality of services offered by the hospital and they did not meet all their needs. The quality of services was perceived to be poor and hospital charges were higher than anticipated by patients. Most patients did not receive all the services required for their treatment with most missing drugs and laboratory tests required for their treatment. Most patients would not recommend the use of the hospital services to their friends and families. Improving service quality will lead to process efficiency, make hospitals run effectively and reduce waiting time to see the doctor and for laboratory results.

The patients recommended that doctors should show interest in helping patients, offer individualized attention and improve their interpersonal and communication skills. Doctors should also be neatly dressed and avoid wearing “hijab” especially at the emergency department as it hinders communication. Insufficient staff lead to long waiting times and the patients felt more doctors needed to be employed to ensure patients were served promptly and sufficient specialist employed to handle complicated cases. The cost of consultations and treatment at the hospitals was high and needed to be reviewed. The study found out that drugs needed to be supplied in adequate amounts to hospital pharmacies to avoid patients being asked to buy drugs from outside the hospital. The hospital response to emergency cases needed to be improved to ensure urgent handling of emergencies to reduce morbidity. Hospitals should ensure continuous supply of clean water and maintain lavatory cleanliness. More seats should be provided at the waiting bay to ensure patients’ are comfortable as they wait to be served.

4.5 Correlation between Operational Performance and Service Quality Dimensions

Pearson's correlation coefficient was used to establish the relationships between service quality dimensions (reliability, empathy, responsiveness, tangibility and assurance) and operational performance.

Table 4.11: Correlation between Operational Performance and Service Quality Dimensions

		Operational Performance
Service Reliability	Pearson Correlation	0.393**
	Sig. (2-tailed)	0.000
	N	252
Empathy in Service	Pearson Correlation	0.442**
	Sig. (2-tailed)	0.000
	N	252
Service Responsiveness	Pearson Correlation	0.408**
	Sig. (2-tailed)	0.000
	N	252
Hospital Tangibility	Pearson Correlation	0.060
	Sig. (2-tailed)	0.346
	N	252
Service Assurance	Pearson Correlation	0.546**
	Sig. (2-tailed)	0.000
	N	252

** Correlation is significant at p <0.01 significance level (2-tailed)

Source: ResearchData (2016)

As presented in Table 4.11 above there is a positive and insignificant relationbetween hospital tangibles and operational performance (Pearson correlation=0.060 and p<0.346). The resultsshow that there was a positive and significant relation between service reliability and operational performance (Pearson correlation=0.393 and p<0.000).

The correlation between empathy in services and operational performance is positive and significant (Pearson correlation =0.442 and p<0.000). Thecorrelation between service responsiveness and operational performance is significant and positive(Pearson correlation=00.408 and p<0.000). Service assurance had a positive andsignificant relation with operational performance (Pearson correlation=0.546and p<0.000).Results in table 4.10 showsthere is a positive and significant relation between operational performance and all service quality dimensions however hospital tangibles had an insignificant relationship.

4.6 Regression Analysis of the Model

A multiple linear regression analysis was conducted to evaluate the relationship between the dependent factor operational performance and service quality dimensions: hospital tangibles, service reliability, service responsiveness, service assurance and empathy in services.

The regression equation was

$Y= \beta_0+ \beta_1X_1+ \beta_2X_2+ \beta_3X_3+ \beta_4X_4+ \beta_5X_5+ \varepsilon$

Table 4.12 Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the estimate
1	0.684[a]	0.468	0.457	0.39002

a) Predictors: (Constant), Hospitals tangibles, service reliability, service responsiveness, service assurance and empathy in services

b) Dependent variable: Operations performance

Source: ResearchData (2016)

Coefficient of determination R^2 was used to show how operations performance varied with total value of hospital tangibles score, service reliability score, service responsiveness score, service assurance score and empathy of services score. These five service quality variables studied explained 46.8% of the variables that affect operations performance as represented by R Squared (Coefficient of determination). Thus other aspects that were not studied contribute to 53.2% of the variables that influence operations performance.

Table 4.13: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	**Regression**	32.954	5	6.591	43.327	.000[a]
	Residual	37.421	247	0.152		
	Total	**70.375**	**252**			

a) Predictors: (Constant), Total value of hospital tangibles score, service reliability score, service responsiveness score, service assurance score and empathy in services score.

b) Dependent Variable: Operations performance

Source: Research Data (2016)

ANOVA was used in the study to evaluate the regression model significance, an f-significance value of p less than 0.05 (that is .000) was computed. The model can thus be said to be statistically significant in predicting how hospital tangibles, service reliability, service responsiveness, service assurance and empathy of services affect operations performance.

This illustrates that the regression model has a less than 0.05 chance or likelihood of giving a wrong estimate or computation. This result of 0.000 shows that the model portrays a 95% and above confidence level thus the results have a high reliability.

Table 4.14Coefficients Results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.304	.091		14.259	.000
Hospital tangibles	0.027	.085	.047	.317	.752
Service reliability	0.538	.067	.696	7.967	.000
Service responsiveness	0.251	.078	.464	3.221	.001
Service assurance	0.310	.067	.394	4.594	.000
Empathy of services	0.193	.060	.212	3.196	.002

a) Predictors: (Constant), hospitals tangibles, service reliability, service responsiveness, service assurance and empathy in services
b) Dependent Variable: Operations performance

Source: Research Data (2016)

The regression equation was

$$Y = 1.304 + 0.027X_1 + 0.538X_2 + 0.251X_3 + 0.310X_4 + 0.193X_5 + \varepsilon$$

Where Y = Dependent (Operational Performance)

X_1 = Total Value of hospital tangibles score

X_2 = Total value of service reliability score

X_3 = Total Value of service responsiveness score

X_4 = Total Value of service assurance score

X_5 = Total Value of empathy in services score

ε = Error term

From the above regression equation holding all factors (hospitals tangibles, service reliability, service responsiveness, service assurance and empathy in services) constant, other factors affecting operations performance will be 1.304. This depicts that when all other service quality variables are at zero, a unit rise in hospital tangibleswill influence operations performance by a score of 0.027; a unit rise in service reliabilitywill influence operations performance by a score of 0.538; aunit rise in empathy in serviceswill influence operations performance by a score of0.193; a unit increase in service responsiveness score will influence operations performance by a score of 0.251; and a unit increase in service assurance will influence operations performance by a score of 0.310. This infers thatservice reliabilityinfluences the operations performance most trailed by total value of service assurance, service responsiveness and empathy of serviceswith hospital tangibles having the least influence.

Results above show that there is a significant relationship between operations performance and the service quality variables; service reliability ($p=0.000<0.05$), service responsiveness ($p=0.001<0.05$), service assurance ($p=0.000<0.05$) and empathy in services ($p=0.002<0.5$) as illustrated by the p values with hospital tangibleshaving an insignificant relationship with operational performance ($p=0.00<0.05$).

4.7 Relationship between Operational Performance and Service Quality

The relationship between service quality and operational performance was assessed using the Pearson correlation.

Table 4.15: Correlations between Operational Performance and Service Quality

		Operational Performance	**Service Quality**
Operational performance	Pearson Correlation	1	0.406**
	Sig. (2-tailed)		0.000
	N	252	252
Service quality	Pearson Correlation	0.406**	1
	Sig. (2-tailed)	0.000	
	N	252	252

Source: ResearchData(2016)

As shown in Table 4.15, there is a positive significant relationship between service quality and operational performance, with a correlation coefficient of R squared = 0.406. This depicts that there is a shared association between service quality and operational performance, and the correlation coefficient R squared = 0.406 is at the 0.01 level (2-tailed). Thus it can be concluded that the relation is positive, connoting that service quality increase would result in higher operational performance.

CHAPTER FIVE
SUMMARY OF THE FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This section provides the summary of findings from chapter four, and also gives the study conclusions and recommendations based on the objectives of the study. The objectives of this study were to establish perception of service quality dimensions by patients in public hospitals in Mombasa County and to determine the relationship between service quality dimensions and operational performance of public hospitals in Mombasa County. All test which included descriptive analysis, regression analysis and correlation were statically analyzed using SPSS.

5.2 Summary of the Findings

The study established that perception of service assurance in the hospital was rated to a low extent as indicated by the average score of 2.08. Empathy of services in the hospital was rated to a low extent as shown by the average score of 2.01.The study found that perception of service reliability in the hospital was rated to a low extent as showed by the average score of 1.92. The study also established that perception of service responsiveness in the hospital was rated to low extent as shown by the average score of 1.87 andperception of hospital tangibles was rated to a low extent as showed by the average score of 1.79.The study found that service assurance, service reliability, empathy of services and hospital tangibleswas perceived to be poor.Patients were not content or satisfied with hospital service quality with hospital tangibles perceived as the worst feature of service quality.The overall service quality was rated to a low extent with a mean of 1.93 which indicates service quality is poor.

From the findings it was found that (48%) of the respondents had waited for 30 to 60 minutes to see the doctor and (42%) had waited for 60 to 90 minutes for laboratory results.The waiting time to see the doctors has a negative significant relationship with all service quality dimensions. There is a negative and significant relationship between service reliability, service responsiveness, service assurance, empathy of services and hospital tangibles with waiting time to see doctors and for laboratory results. Waiting time to see the doctor has more effect on service quality perception than the waiting time for laboratory results.

The findings indicate that patients were not satisfied or content with the quality of services offered by the hospital and they did not meet all their needs. The quality of services was perceived to be poor and the hospitals services were not unique nor innovative with hospital charges being higher than anticipated by patients. Most patients did not receive all the services required for their treatment with most missing drugs and laboratory tests required for their treatment. X- ray tests were available to a moderate extent.Most patients would not recommend the use of the hospital services to their friends and families. Improving service quality will lead to process efficiency, make hospitals run effectively and reduce waiting time to see the doctor and for laboratory results.

The correlation findings show that there is a positive and insignificant relationbetween hospital tangibles and operational performance (Pearson correlation=0.060 and $p<0.346$), there was a positive and significant relation between service reliability and operational performance (Pearson correlation=0.393 and $p<0.000$), empathy in services and operational performance is positive and significant (Pearson correlation =0.442 and $p<0.000$), correlation between service responsiveness and operational performance is significant and positive (Pearson correlation=00.408 and $p<0.000$) and service assurance had a positive andsignificant relation with operational performance (Pearson correlation=0.546 and $p<0.000$).This depictsthere is a positive and significant relation between operational performance and all service quality dimensions however hospital tangibles has a positive insignificant relationship with operational performance as p values suggest.

From the regression equation holding all factors (hospital tangibles,service reliability, service responsiveness, service assurance and empathy in services) constant, other factors affecting operations performance will be 1.304. This depicts that when all other service quality variables are at zero, a unit rise in hospital tangibleswill influence operations performance by a score of 0.027; a unit rise in service reliabilitywill influence operations performance by a score of 0.538; aunit rise in empathy in serviceswill influence operations performance by a score of0.193; a unit increase in service responsiveness score will influence operations performance by a score of 0.251; and a unit increase in service assurance will influence operations performance by a score of 0.310. This infers that service reliabilityinfluences the operations performance most trailed by total value of service assurance, service responsiveness and empathy of serviceswith hospital tangibles having the least influence.

The study finally found that there is a positive significant relationship between service quality and operational performance, with a correlation coefficient of R squared = 0.406. This depicts that there is a shared association between service quality and operational performance, and the correlation coefficient R squared = 0.406 is at the 0.01 level (2-tailed). Thus it can be concluded that the relation is positive, connoting that service quality increase would result in higher operational performance.

5.3 Study Conclusions

From the findings majority of the patients (42%) earned between 0 and 30,000 shillings this shows that majority of the patients who attended the public hospitals were in low income class since they were not categorized among the middle class (salary of above Kshs 80,000/-). The current study findings indicate hospital tangibles, service assurance, empathy in services,service reliability and service responsiveness were all perceived to be poor and patients were not content with hospital services quality. Hospital tangibles was perceived as the worst feature of public hospitals. The overall perception of service quality was poorhence improvement required to improve service quality perception.The study concurs with Youssef et al, (1995) findings in the UK where patient anticipations before admission and their perception after release from hospitalfailed to meet their expectations in hospitaltangibles, service reliability, service responsiveness, service assurance and empathy of services.

The study findings indicate that patients waited for almost an hour for consultations, more than one hour for laboratory resultswhich had a significant influence on perception of service quality which declined with higher waiting time. The waiting time to see the doctor had more effects on service quality perception than waiting time for laboratory results. Long waiting time affected patient satisfaction, loyalty and image of public hospitals,(Chahal & Kumari, 2012). The finding is consistent with Masson et al (2016) who found out that poor response time and high waiting time had a detrimental effect on perception of service quality of firm offerings and affected customer satisfaction and operational performance of the organization.

The study found out that most patients did not receive all the drugs, laboratory tests and X-ray tests required for treatment within the hospital and that they were asked to buy their own drugs and access laboratory and X-Ray tests elsewhere which is consistent with

KACC (2010) findings that hospitals didn't have sufficient medical supplies with patients being asked to buy their own drugs and equipment to access healthcare.

According to the findings employees' communication skills and relationship with patients needed to be improved to enhance service quality provision which concurs with Taner and Antony (2006) findings that lack of communication between patients and healthcare workers had detrimental effects on service quality. This finding is also consistent with Mbuthia (2013) finding that communication is the least practiced dimension in public hospitals in Mombasa County.

Speed of delivery is critical in choosing goods and services and its' greatly affected by speed of decision making and flow of materials and information in all operations involved in product or service production, (Slack el, 2010). The study found that improving service quality would lead to process efficiency of hospital systems, reduce waiting time for patients' consultation,standardize procedures,ensure effective diagnostics and efficient reporting systems to enable swift decision making by clinicians, waste and cost reduction enhancing service quality and operational performance.Improving service quality would lead to cost reduction, process efficiency, waste reduction which in turn would lead to customer satisfaction and an increase in return on investments, (Nair, 2016).

The study showed that there is a significant positive relationship between service quality and operational performance with an increase in service quality resulting in increased operational performance. Increase in hospital tangibles, service reliability, service responsiveness, service assurance and empathy in services would all lead to an increase in operational performance which is consistent with Inyo (2013) and Nair (2016) that service quality perception has a significant influence on operational performance.

5.4Study Recommendations

The study recommends that X-ray and laboratory equipment need to be upgraded and sufficient drugs supplied for public sector hospitals to provide comprehensive diagnostics techniques and treatment to enhance operational efficiency and service quality.Sufficient and proficient personnel needed to be employed and training provided for different disciplines and cadres to provide and sustain high levels of service quality and to attract highly qualified specialist.

Training of human resource on customer relationship is essential for public hospitals to provide individualized attention and patient centered care since efficient communication skills and customer relationship will enhance service quality and operational performance.

The study also recommends that response to emergencies should be swift and sufficient and highly trained personnel employed to handle emergencies to improve operational performance and service quality. This will enhance responsiveness to patience needs which is critical for patient satisfaction.

The study also recommends the need for hospitals departments to review their service qualityby assessingpatient satisfaction levels and determining patient satisfaction determinants periodically to improve and maintain sustainable quality services. The study further recommends that hospitals need to create a positive image on patients and the hospital management should improve the service quality provided and focus on improving quality of service, reliability, speed of response, and safety.

5.5 Limitations of the Study

The sample used in this research compromises only public hospitals in Mombasa County which limits the generalization of the findings to the private hospitals. Operational performance was studied from patients' perspective which may vary with real operational performance of the hospital from managements' perspective. Researchers need to examine other variables that could further explain patient's perception of image in the public healthcare context and its effects on service quality. The respondents being patients, it was hard to assure them that the study would not infringe on their confidential information and some declined from taking part in the study.

5.6 Suggestions for Further Research

Further research may be carried out in other diverse regions in the country like the North Eastern region where there are limited medical resources in order to stimulate a comparative study. Further research may be conducted by comparing perception of quality of services in public hospitals and private hospitals in the county.Further research may be important to investigate the degree ofquality of services in the different tiers of public hospitals in the county. Further studies could also be done to establish the relationship between service quality and health outcomes such as length of stay,

emergency department use, number of days before readmission to hospital, hospital acquired infections, morbidity and mortality.

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APPENDICES

Appendix I: Questionnaire

TOPIC: THE RELATIONSHIP BETWEEN SERVICE QUALITY AND OPERATIONAL PERFOMANCE OF PUBLIC HOSPITALS IN MOMBASA COUNTY, KENYA

Dear respondents,

You are kindly requested to answer all questions in this research questionnaire. The information that you will provide shall be treated with a high level of confidentiality and strictly used for the purpose of this research study. This study aims at determining how service quality dimensions tangibles, reliability, responsiveness, assurance and empathy are perceived and valued by patients and their relationship with operational performance of public hospitals in Mombasa County.

Please do not indicate your name

Section A: Demographic Information

Answer by ticking (√**)** appropriate box.

Characteristics

1. Gender: ☐ Male ☐ Female

2	AGE (Years)	Under 25	25 -35	35 - 45	45 - 55	55 and above
3	How many times have you visited the hospital	1st visit	2-4	5-7	7-9	10 and above

4	How much is your monthly income	0 - 30000	30000-60000	60000-90000	90000-120000	120000 and above

Section B: Service Quality Dimensions

Please Tick (√) on ONE response for each question based on your experience and perception of treatment received in the hospital.

	Tangibles	**Strongly Disagree**	**Disagree**	**Not sure**	**Agree**	**Strongly Agree**
1	The hospital has up to date facilities e.g. equipment, X-ray department, laboratories					
2	The physical facilities of the hospital are visually attractive e.g. reception area, wards and outpatient department					
3	Employees are neat in appearance e.g. well groomed, clean/ smart uniform					
4	Materials associated with services are visually attractive e.g. documentation, directions					
	Reliability	**Strongly Disagree**	**Disagree**	**Not sure**	**Agree**	**Strongly Agree**
5	The hospital provides service at the time promised e.g. time of operation, investigation, medicine food					
6	Hospital shows sincere interest in solving patients' problems					
	Reliability	**Strongly**	**Disagree**	**Not**	**Agree**	**Strongly**

		Disagree		**sure**		**Agree**
7	Hospital performs the service right the first time					
8	Hospital maintains accurate records					
9	Hospital is dependable, it provides all services as promised					
	Responsiveness	**Strongly Disagree**	**Disagree**	**Not sure**	**Agree**	**Strongly Agree**
10	Staff tell patients exactly when services will be performed					
11	Staff give prompt service to patients					
12	Staff are always willing to help customers					
13	Staff readily respond to patients requests					
	Assurance	**Strongly Disagree**	**Disagree**	**Not sure**	**Agree**	**Strongly Agree**
14	Employees instill confidence and trust in patients					
15	Patients feel safe when receiving medical treatment					
16	Employees are courteous					
17	Employees have the knowledge to answer patients questions					
	Empathy	**Strongly Disagree**	**Disagree**	**Not sure**	**Agree**	**Strongly Agree**
18	Employees give patients individual attention					
19	Employees have patients best interest at heart					

20	Employees understand specific needs of patients					
21	Employees listen to patients and keep them informed					
22	The hospital has convenient operating hours for patients					

Section C: operational Performance

Please Tick (√) on ONE response for each question based on your experience and perception of treatment received in the hospital.

		0–30 minutes	30-60 minutes	60-90 minutes	90-120 minutes	2 hours and above
1	How long did you wait in line to see the doctor					
2	What was the average waiting time for laboratory results					

			Strongly Disagree	Disagree	Not sure	Agree	Strongly Agree
3	The hospital offers excellent quality services						
4	The services offered by the hospital were satisfying and met my needs						
5	Better service quality can reduce waiting time to see the doctor and for laboratory and X - ray test results						
			Strongly Disagree	**Disagree**	**Not sure**	**Agree**	**Strongly Agree**
6	I will recommend the use of the hospital services to my family and friends						
7	I received all services required for my treatment within the hospital	**Drugs**					
		X – ray tests					
		Laboratory tests					
8	Better service quality can make the hospital run smoothly						
9	The hospital offers unique and innovative services						

10	The cost of services in the hospital was reasonable and fair					
11	Better service quality can improve process efficiency					

Please Tick (√) on ONE response for each question based on your experience and perception of treatment received in the hospital.

12. What do you recommend for the hospital to improve its service quality?

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Appendix II: Letter of Introduction

UNIVERSITY OF NAIROBI
MOMBASA CAMPUS

Telephone: 020-2059161
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsities
Our Ref: D61/80406/2012

P.O. Box 99560, 80107
Mombasa, Kenya

DATE: 8TH SEPTEMBER 2016

TO WHOM IT MAY CONCERN

The bearer of this letter, **Geraldine Kawira Munene** of Registration Number **D61/80406/2012** is a Master of Business Administration (MBA) student of the University of Nairobi, Mombasa Campus.

She is required to submit as part of her coursework assessment a research project report. We would like the student to do her project on ***Relationship Between Service Quality and Operational Performance of Public Hospitals in Mombasa County, Kenya.*** We would, therefore, appreciate if you assist her by allowing her to collect data within your organization for the research.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organization on request.

Thank you.

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MOMBASA CAMPUS

Zephaniah Ogero Nyagwoka
Administrative Assistant, School of Business-Mombasa Campus

Appendix III: Letter of Data Collection Authorization

COUNTY GOVERNMENT OF MOMBASA

DEPARTMENT OF HEALTH

OFFICE OF THE CHIEF OFFICER OF HEALTH

Email : cohealthmsa@gmail.com
When replying please quote

P O Box 90441 – 80100
Msanifu Kombo Street,
MOMBASA

Ref. COH/Msa/MED.1/

Date: 14th September, 2016

The Chief Administrator – CPGH

All Medical Superintendents

- Port Reitz Sub County Hospital
- Tudor Sub County Hospital
- Likoni Sub County Hospital

RE: AUTHORITY TO COLLECT DATA – DR MUNENE GERALDINE

The above named is a senior Pharmacist working at the Coast Province General Hospital and is currently pursuing her Master of Business Administration (MBA) at the University of Nairobi, Mombasa Campus.

She is doing her project report on **relationship between service quality and operational performance of public hospitals in Mombasa County** and has requested this office to allow her collect data from various health facilities in Mombasa County.

This office has no objection and has authorized her to collect data in various facilities in Mombasa County. You are therefore requested to accord her the necessary support during her data collection in your facilities.

Thank you.

COUNTY GOVERNMENT OF MOMBASA
CHIEF OFFICER - HEALTH
14 SEP 2016
P. O. Box 90441 - 80100
MOMBASA
DEPARTMENT OF HEALTH SERVICES

DR. KHADIJA SOOD SHIKELY, HSC
CHIEF OFFICER, COUNTY DEPARTMENT OF HEALTH
COUNTY GOVERMENT OF MOMBASA.

Appendix IV: List of Public Hospitals in Mombasa County

Hospital Name	**Tier of Hospital**	**Hospital Description**	**Level of Care**
Coast General Hospital	Tier 5	Regional Referral Hospital	Tertiary care
Port Reitz County Hospital	Tier 4	County Referral Hospital	Secondary care
Likoni Sub-County Hospital	Tier 3	Sub County Hospital	Secondary care
Tudor Sub- County Hospital	Tier 3	Sub County Hospital	Secondary care

Appendix V: Research Budget

S/No	Activity	Costing
1	Typing of the proposal and final project	4,500.00
2	Printing of Journals, proposal and final project	15,000.00
3	Photocopying copies of the document for the panel	3,500.00
4	Photocopying of the questionnaires	5,200.00
5	Data collection	4,500.00
6	Acquiring SPSS for Data analysis	15,000.00
8	Travel costs for data collection	5,000.00
9	Binding of the proposal and final project	3,000.00
Total		55,700.00

Appendix VI: Research Timeline

S/No	Activity	May-2016	Jun-2016	Jul-2016	Aug-2016	Sep-2016	Oct-2016	Nov - 2016
1	Drafting of proposal							
2	Proposal presentation							
3	Proposal corrections							
4	Final proposal presentation							
5	Corrections recommended during presentation							
6	Approval for Data Collection							
7	Data collection							
8	Data analysis and Drafting final project							
9	Project presentation							
10	Final project corrections							
11	Final project presentation							