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Determinants of the performance of satellite clinics: a case study of Mater Misericordiae Hospital in Nairobi, Kenya.

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DETERMINANTS OF THE PERFORMANCE OF SATELLITE CLINICS: A CASE STUDY OF MATER MISERICORDIAE HOSPITAL IN NAIROBI, KENYA

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the project contains no material previously published or written by another person except where due reference is made in the project itself.

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ABSTRACT

Increased competition in the healthcare industry has forced hospitals to adopt innovative expansion strategies. One such strategy is establishment of satellite clinics. This study sought to examine the performance of the satellite clinic model for the Mater Hospital in Nairobi. The study specifically sought to establish the effect of medical infrastructure, medical staff responsiveness, and medical service quality on the performance of satellite hospitals in Kenya. The study adopted a quantitative research methodology relying on a descriptive research design. The unit of analysis was the satellite hospitals under Mater Hospital with the unit of observation being drawn from the patients served within the satellite hospitals. The satellite hospitals served a total of 126,986 patients in 2018. The study utilized the Krejcie and Morgan table to draw a representative sample that research data was collected from. The study utilizeda structured questionnaire with Google forms being utilized in the data collection. The collected study data were analyzed using both descriptive and inferential statistics. The study was able to obtain an 83% response rate with the findings. The results show that over 59% of respondents were female and that 80% have attained more than o-level education. 58% of respondents were repeat clients having received services from the hospital for over three years. The study concludes that $R^2 = .493$ variations in the hospital performance of satellite clinics are determined by the level of medical service quality, medical service responsiveness and medical infrastructure at the satellite clinics. The study recommends that the hospital should foster provision of quality medical care, professionalism and responsiveness of the workforce to enhance performance. The study also recommends that the hospital ensures adequate facilities and accessibility of the satellite clinics to enhance performance. The study further recommends that the hospital should rely on the findings of the study in making future decisions in the expansion of satellite clinics and should leverage modern technologies in enhancing patient care.

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ABBREVIATIONS AND ACRONYMS

AKUH	Aga Khan University hospital
CBD	Central Business District
CHOP	Children's Hospital of Philadelphia
DEA	Data Envelopment Analysis
HIMS	Hospital's Information Management System
IRB	Institution Review Board
MMH	Mater Misericordiae Hospital
SPSS	Statistical Package for Social Sciences
TRM	Thika Road Mall
UCSF	University of California San Francisco

OPERATIONAL DEFINITION OF TERMS

Hospital	A hospital is a medical facility dedicated to the delivery of comprehensive medical care to both hospitalized and outpatients(Ozcan, 2014)
Hospital Staff	Staff in hospitals include medical and non-medical staff. The medical personnel include consultants, medical doctors, pharmacists, radiologists, pathologists, nurses, laboratory technicians, and counsellors. Non-clinical personnel include administration, human resource, finance, customer service, marketing and housekeeping(Ozcan, 2014)
Medical Infrastructure	This refers to the hospital environment, patient amenities and facilities in a consumerist sense(York & McCarthy, 2011)
Medical Service Quality	Refers to the skills, capacity, and actual performance of health providers, managers and support staff(York & McCarthy, 2011)
Medical Staff Responsiveness	This primarily focuses on the technical accuracy of diagnoses or procedures as well as on compliance with professional specifications (Rashid and Jusoff, 2009)
Organizational performance	It is an accomplishment of a task in accordance with an agreed-upon standard of accuracy, completeness, and efficiency (Adams, Khan, Raeside, & White, 2007).
Satellite clinic	A health care facility usually operated under the auspices of a large institution but situated in a location some distance from the larger health centre(Bacon & Mark, 2009)

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The healthcare industry is changing around the world, characterized by new disease patterns, advanced technologies; unpredictable patients' needs; physical infrastructure and diverse workforce requirements (Diab, 2014). Hospitals are the first points of health care service delivery and are critical in fostering healthy populations (Muhindi, 2012). Superior organizational performance would boost healthcare service delivery in the country. The public concern about healthcare issues has increased, and patients want to be treated in the most effective way as well as being provided with the highest quality of care (CCD, 2014). It is therefore important for private hospitals to examine how various internal factors can lead to superior organizational performance.

Every company seeks growth in one way or the other. Every company has their own strategies by which they can implement growth by increasing its sales and profits. The strategy that the business uses to implement growth in the market depends on its financial situation in the market, the competition, and to a large extent on government regulations (Amin, Yan, Sriram, Bhasin, & Posse, 2019). Types of business growth include organic growth, Strategic business growth, partnership, merger, acquisition and internal business growth (Alli, Maharaj, & Vawda, 2012). Growth strategies can also be described as vertical - forward or backward and horizontal. Expansion in the health care sector also follows similar expansion strategies such that hospitals with many branches operate in two types of organizational configurations; one, where there is a contractual relationships between hospitals and physicians (vertical integration and health plans); and one in which hospitals merge or align to form systems or networks (horizontal integration). The effect of these forms of integration have been studied previously (Xu, Wu, & Makary, 2015).

Pham (2011) examined the efficiency and productivity of hospitals during the health reform process in Vietnam. The study found that there was an improvement in the relative efficiency of hospitals from 65% in 1998 to 76% in 2006. The improvement was attributed to technical reforms in the hospital sector during those years. The study showed that improvements in technical aspects through the encouragement of innovation in hospital operations would

improve the efficiency of hospitals. Nayar, Ozcan, Yu and Nguyen (2013) similarly analyzed hospital performance in terms of both technical efficiency and quality. The study found that only less than 20% of the sample hospitals were optimally performing in both quality and efficiency. The study also found that public, small, teaching hospitals had higher DEA efficiency and quality scores than big hospitals.

Kirigia, Sambo, and Lambo (2015) analyzed the performance of hospitals in Kwazulu- Natal province in South Africa. The study found that only 40% of the hospitals were technically inefficient. The study found that some medical employees were not fully utilized and therefore, there was a need to reduce them to improve the efficiency of the hospitals. Wangari, Anyango and Wanjau (2013) investigated the provision of quality in the public health sector in Kenya and noted that low employee capacity, inadequate technological adoption, ineffective communication, and insufficient financial resources affected the quality performance of hospitals. The study recommended a comprehensive healthcare policy that addressed the plight of medical staff, working environment and resources were critical in ensuring optimal performance of hospitals and increased patient satisfaction and loyalty.

1.1.1 Determinants of Performance in Hospitals

The organizational performance examines how a firm is able to meet its objectives over time. Organizational performance is an essential concept in strategic management, as managers are judged on the performance of their organizations. Performance measurement is done across a range of critical factors that mutually direct attention to strategic areas that are important for superior organizational outcomes (Teeratansirikool, Sienngthai, Badir, & Charoenngam, 2013). Similar to other service organizations, productivity and performance of hospitals have been difficult to measure due to the complex nature of the services provided as well as the special nature of the relationship between consumer and service provider (Chansky, Garner, & Raichoudhary, 2013). The international practice is to measure the performance of hospitals based on the two main objectives of costs and quality of care (Mayer, 2013). Comparatively, measuring the quality performance of hospitals is more difficult than cost (efficiency) measures (Ozcan, 2014). In this study, organizational performance is described from a rational viewpoint, that hospitals pursue specific objectives that they were built to achieve. (Letting, 2011)

Letting (2011) suggests that organizational performance integrates three broad dimensions, effectiveness, efficiency, and adaptability. Effectiveness in mission hospitals is measured in terms of quality of care that includes; total admissions, discharges and outpatient visits. Efficiency is determined by the average days of hospital stay, and the bed occupation rate. Hospitals are expected to achieve satisfactory levels of efficiency and effectiveness, and studies show that the two are compatible (Health Information and Quality Authority , 2013). The other measures are qualitative performance indicators which include employee satisfaction, quality of service and corporate social responsibility (Mwangi & Ombui, 2013). Quality of service in hospitals can be expressed as the focus on patient safety and clinical outcomes ((Schwarting, Bitar, Arya, & Pfeiffer, 2011). The study measured customer satisfaction, efficiency, effectiveness, growth in the number of customers and referral rates.

The standard and efficiency of healthcare service providers have stagnated, caused by the absence of high-level strategic focus, governance, strategic control as well as inadequate funding (CCD, 2014). Theuri, Mwirigi and Namusonge (2014) identified strategic planning, technological competitiveness, the level of market competition and corporate policies as key determinants of superior organizational performance but recommended further research for different industries. The current study sought to examine how various internal factors determine the performance of the satellite hospitals. The study focused on how medical service quality, medical staff responsiveness, medical infrastructure and location of the hospital affect performance.

1.1.1.1 Medical Service Quality

Technical, medical service quality refers to the skills, capacity, and actual performance of health providers, managers and support staff. It includes clinical skills related to preventive care, diagnosis, treatment and health counselling (Fiala, 2012). According to Pugh et al. (2007), technical quality entails making the right decisions for each patient and having the technical skills to perform the care. Interpersonal quality, in contrast, includes quality of communication, ability to gain/maintain patient's trust and ability to interact in a way that demonstrates empathy, honesty and sensitivity to the patients' concerns. This aspect of care is important for people with chronic illnesses that require patients to adapt to profound lifestyle changes. According to York and McCarthy (2011) found that patients' satisfaction and consideration of their desires and needs are essential elements of marketing, and their acceptance and popularity has been increasing in the health care sector.

1.1.1.2 Medical Staff Responsiveness

According to Rashid and Jusoff (2009), responsiveness in health care services is defined primarily on the basis of the technical and timely accuracy of diagnoses or procedures as well as on compliance with professional specifications. Further, they noted that technical quality is mainly a function of competence of the personnel providing the service. Ismail et al. (2013) indicate that interpersonal relations have been shown to strongly influence clients: confidence in their own choices and ability, satisfaction with services, and the possibility of a return visit. Furthermore, service providers felt that the interpersonal relationships between staff and new clients are influenced by several factors. The key factors which acted as barriers to new clients were the negative attitudes of staff and limited contact time with patients due to shortage of staff (Moore, 2012). The responsiveness of the staff is thus considered very important when choosing a medical facility to engage with.

1.1.1.3 Medical Infrastructure

Healthcare design is increasingly linking the physical environment of medical clinics to patients and staff satisfaction. Improved physical settings can be an important tool in making hospitals safer, more healing, and better places to work (Cesario, 2009). According to Mpinga and Chastonay (2011), assessing patient satisfaction is used to improve the hospital environment, patient amenities, and facilities in a consumerist sense, but not necessarily to improve care. Bacon and Mark (2004) reported that outpatients in four Turkish hospitals indicated that the physical appearance of the hospital is a significant factor in the satisfaction of patients. In some instances, the patients expected the providers to enhance the volume of readings, wall-mounted televisions, health education brochures, water, access to wheelchairs, and no-interrupted space for the minority populations.

1.1.2 Mater Hospital Satellite Hospitals

Mater Misericordiae Hospital (MMH) was founded as a mission hospital in 1962 by the sisters of Mercy from Ireland, and over the years, it has grown from a mission hospital to become one of the largest private hospitals in Kenya. Up until 2010, the hospital operations were confined to the provision of out-patient and in-patient services at the main hospital located in the South B area in Nairobi (Mutio, 2013). The hospital management realized growth had reached a plateau and devised a horizontal expansion strategy through the

establishment of satellites. Formal discussion regarding the establishment of Satellite Clinics commenced in November 2008 at a governing council meeting where a target was set to establish one clinic within a year's time and set up an additional five within the strategic plan period of three years (Mwenemeru, 2018).

The council believed that establishing satellite clinics would allow MMH to reach more people, thus promote access to health services, and increase revenue. A number of factors informed the selection of satellite sites, including the area's population density, demographics of the population in the catchment area and availability of suitable space with high traffic preferably in a shopping mall (Gacheru, 2013).The first satellite clinic opened doors in February 2010 within Nairobi's Central Business District (CBD). The clinic surpassed its projected target in terms of revenue and patient numbers encouraging the hospital to pursue the strategy further. The second clinic was opened in September of the same year in Buruburu, one of the suburbs of Nairobi. Other clinics opened quick succession include Thika (December 2011), Embakasi (May 2012), Westlands (February 2013) and Kasarani (June 2013). The next clinic was opened in June 2019 after a six-year break with another one expected to open soon in Karen area.

1.2 Statement of the Problem

Health care organizations are undergoing fundamental changes (Hassan, Fahim, Zafr, Islam, & Alam, 2016). The rapid pace of change in the health care systems, changes in science and technology, new incentive structures and technologies, moral attitudes, environmental conditions, and influence of rising costs present tremendous challenges for health care managers (Hader, 2016). This has led to hospital managers designing new strategies aimed at enhancing their market share and attaining better performance (Minjire & Waiganjo, 2015).The Mater Hospital operated as a single site facility for 48years until it reached a plateau in growth and expansion. This drove management to devise a strategy of horizontal expansion through the establishment of satellite clinics in 2008. Aside from increasing the Hospital's footprint in different sections of the city and other towns, the management believed that the satellite clinics would contribute to increased traffic towards both the inpatient and specialized clinics at the main hospital. However, no evaluation has been done to assess the performance of the satellites in the provision of quality health care services to its clients. The current study sought to fill these knowledge gaps.

Several empirical studies have been conducted to examine the performance of private hospitals. In a study in Brazil, Araújo, Barros and Wanke (2014) examining the hospital efficiency notes that specializing in services and adoption of new technology enhances service provision. Barik and Desai (2014) studied the determinants of private healthcare utilization in India and notes that quality of the service, cost-efficiency and personnel competencies positively influence service utilization. Kamau (2014) examined how internal factors affect the profitability of Karen hospitals and indicate that the tangibility of the assets, size of the hospital and optimal capital resources positively enhanced performance. Awuor and Kinuthia (2013) studied total quality management in private hospitals in Kenya and indicates that employee training, enhancing hospital information systems, information dissemination and feedback as well as meeting patient's needs were key to improved service provision. Despite the fact that various studies have focused on the performance of private hospitals, there is inconclusive evidence on the key determinants of the performance of satellite hospitals. This study sought to solve this empirical gap by examining the determinants of the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya.

1.3 Objectives of the Study

1.3.1. Overall objective

To examine the determinants of the performance of satellite clinics operated by the Mater Misericordiae Hospital in Nairobi, Kenya

1.3.1 Specific Objectives

i. To establish the effect of medical service quality on the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya

ii. To establish the effect of medical staff responsiveness on the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya

iii. To establish the effect of medical infrastructure on the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya

1.4 Research Questions

i. What is the effect of medical service quality on the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya?

ii. What is the effect of medical staff responsiveness on the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya?

iii. What is the effect of medical infrastructure on the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya?

1.5 Significance of the Study

1.5.1 Policy Makers

The results are expected to be of importance to policymakers and health practitioners to design better practice guidelines and improve decision making geared towards better service delivery and hospital performance in the private sector. Furthermore, the study findings can be vital to enhancing policy changes in public hospitals within the country.

1.5.2 Practitioners

The management will be informed on the patient, facility, and environmental factors contributing to satellite clinic success and this knowledge will be used to determine decisions made by management such as the choice of location of future satellite clinics. Challenges faced by the satellite clinics will be evaluated and this will also inform management so that they can address and mitigate these challenges to ensure satellite success. If the challenge is in the choice of location, then there may need to relocate the clinic. Also, a better assessment will be employed in the location of future satellite clinics. It is hoped that this paper will inform decision-makers of healthcare organizations in general on the effects of the introduction of satellite clinics on the overall performance of their business. It will also inform on factors that generally affect the performance of satellite clinics.

1.5.3 The Research community

The current research study will be important in expanding the available empirical literature. Further, with the dearth in the literature on satellite hospitals, the results of the research will foster the available reference materials and enhance the knowledge gap.

1.6 Scope of the Study

The geographical scope of the research was focussed on the satellite hospitals under Mater Hospital within Nairobi and Adjacent areas. The contextual scope of the research focused on the examination of how medical service quality, medical staff responsiveness and medical infrastructure. The theoretical scope of the research was anchored on the resource-based view theory and the balance scorecard approach. The study further adopted a quantitative research approach. The sample scope of the research was obtained randomly from patients accessing services within the hospital.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter specifically focuses on the review of the theories that anchor the research, the review of various empirical studies, the summary of the research gaps, and the presentation of the conceptual framework. The chapter further underlines the operationalization of the research variables.

2.2 Theoretical Review

A theory can be defined as a broad and natural explanation for a wide range of phenomena and facts (Bradford, 2015). The study adopted the balance scorecard approach to link the performance of private hospitals and the resource-based view theory to underline the various determinants of organization performance.

2.2.1 Balance Scorecard Approach

This model emerged from the work of Robert Kaplan and David Norton in the early 1990s (Kaplan & Norton, 1992). It was formulated as an approach for measuring corporate performance. The aim was to align corporate activities with objectives, business goals, mission and vision. Kaplan (2010) highlights the conceptual foundation of the balanced scorecard. The approach was formulated to ensure that all aspects of the organization are assessed. The balanced scorecard has four perspectives namely customer, learning and growth, internal business process and financial perspective. The financial perspective focuses on financial management issues. The customer refers to the stakeholders' who serve and are served by the organization. The learning and growth components mainly address staff development needs. The internal business process refers to process maps that describe the beginning to the end of the various business activities.

These perspectives allow the measurement of tangible and intangible assets. Although the balanced scorecard was originally formulated to meet the needs of the private sector, its application has been extended to the public sector and the not for profit organizations (Kaplan, 2010). For the latter, since the ultimate goal is not profit maximization, the financial component is replaced by the core business interest such as poverty eradication, improved

health and welfare, increased immunization, or community empowerment depending on the institution (Marete, 2015). Kairu, Wafula, Okaka, Odera and Kerele (2013) indicate that non-financial measures are as important as financial measures but when the two are combined, they produce better results.

The model points the need to apply the balanced scorecard approach in performance measurement in this study. The approach takes into account various parameters in measurement. The performance score used in this study was derived from the balanced scorecard approach. The focus of any hospital is to provide the best services and exhibit the best performance. The balance scorecard was useful in the study to measure performance of the hospital and how best to enhance it.

2.2.2 Resource-Based View Theory

The origins of the Resource-based view theory (RBV) can be traced back to earlier works by (Penrose, 1959). Penrose recognized the importance of resources to a firm's competitive position. She suggested that these resources may only contribute to a firm's competitive position to the extent that they are exploited in such a manner that their potentially valuable services are made available to the firm. Barney (1991) and Wernerfelt are the major proponents of the RBV theory. Wernerfelt (1984) defined resources as those tangible and intangible assets, which are tied semi-permanently to the firm.

Day (1994) refers to capabilities as complex of bundles of skills and accumulated knowledge, exercised through organizational processes that enable enterprises to coordinate activities and make use of their assets. In other words, the capabilities represent the skills allowing enterprises to deploy resources to reach the desired objective (Grant, 1991). To reach a sustained competitive advantage, the capabilities should be valuable, rare, difficult to identify and understand, imperfectly transferable, not easily replicated and substitutable (Barney, 1991). A central premise of the resource-based view is that firms compete on the basis of their resources and capabilities. A holder of a resource is able to maintain a relative position vis-à-vis other holders as long as these act rationally (Wernerfelt, 1984).

Mills, Platts, and Bourne (2003) stipulate that the fundamental sources and drivers of competitive advantage and superior performance are chiefly associated with the attributes of resources and capabilities, which are valuable and costly-to-copy. These resources are

classified as physical (plant, equipment, geographical locations, finances), organizational (structure, planning and coordinating social relations, and HR systems), and human (experiences, skills, judgments, and knowledge of employees).

The resource-based view emphasizes the internal capabilities of the organization in formulating a strategy to achieve a sustainable competitive advantage in its markets and industries. The RBV theory was integral in this research in the examination of the independent variables of the research. Hospitals also seek to gain competitive advantage with medical service quality, medical staff responsiveness and medical infrastructure among the ways used to achieve it. The study thus sought to find out whether these factors indeed help the hospital gain competitive advantage and improve its performance. The theory also helped in determining how the various internal environment factors, medical service quality, medical staff responsiveness, medical infrastructure and geographical location, affect hospital performance.

2.3 Empirical Review

The empirical review section presents the various empirical studies that have been conducted in line with the research objectives.

2.3.1 Medical Service Quality and Hospital Performance

A number of studies have examined the relationship between service quality and performance of healthcare facilities across low and middle-income countries with the majority being cross-sectional studies. The review of the below studies focuses on a number of studies conducted with research gaps being identified.

In a study in India, Kondasani and Panda (2015) examined the link between customer perceived service quality, satisfaction and loyalty in Indian private healthcare. The study employed a descriptive research design and sampled 475 patients using a structured questionnaire. The collected data were analyzed using descriptive, factor and regression analysis techniques. The results indicate that the interaction with the customer, quality of the facilities and patient-service provider relationship positively influenced customer perception of the private hospitals. The study, however, does not examine the performance of satellite clinics.

Sarwar (2014) studied healthcare services quality in Malaysian Private Hospitals. The study employed interview-based qualitative research focusing on patients receiving care from private hospitals in Kuala Lumpur between 2013-2014. The findings of the study indicate the main aspects of healthcare service quality as perceived by the patients include the cost and location of the hospital, the quality of patient care, the availability of adequate facilities and the reliability of the personnel. The study employed a qualitative approach, while the current study examined service quality using a quantitative approach.

Ogunnowo, Olufunlayo, and Sule (2015) conducted a study on client perception of service quality at the outpatient clinics of a General hospital in Lagos, Nigeria. The study employed a descriptive cross-sectional study between March-May 2013. The study employed a multistage sampling and utilized the service quality model to examine the patient's perception. The results indicate an overall positive perceived service quality. The results indicate that quality assurance and reliability was the most important predictor of service quality, while responsiveness had major deficiencies within the hospital. The study was conducted within a public hospital while current research focuses on private satellite hospitals.

Owusu-Kwateng, Lumor, and Acheampong (2019) conducted a comparative study on the link between service quality and patient satisfaction in public and private hospitals in Ghana. The study adopted a mixed research approach with questionnaires and interviews being utilized. The study utilized Gap analysis and independent t-tests. Findings indicate that the level of care and level of attention were higher within private hospitals than in public institutions. The research further indicates that service quality significantly predicts the level of patient satisfaction. The research, however, does not explicitly link the quality of medical care and performance of private hospitals.

Maina (2016) examined the effect of customer perception on the performance of private Hospitals in Nairobi. The study employed a descriptive research design with the unit of analysis being Karen Hospital. The study employed a semi-structured research questionnaire in the data collection. The results indicate that the client's perception of the cost did not significantly affect the performance of the hospital. The study indicates that customer perception of hospital staff, the quality of service and efficiency significantly predicted the performance of the hospital. The study focuses on Karen hospital while current research examines Mater Misericordiae Hospital satellite institutions.

Musyoka, Ochieng, and Nzioki (2016) examined the factors affecting the provision of quality service in the public health sector in Nyahururu district hospital, Kenya. The study utilized a descriptive approach with the target population being 129 doctors and nurses within the health sector. The research utilized both primary and secondary data. The findings indicate that enhancing employee capacity will improve service quality. The study found that public health institutions should advance in modern technologies adoption, improve processes and communication and enhance individual participation to improve quality of service. The study focuses on service quality while current research examines the performance of private satellite hospitals.

2.3.2 Medical Staff Responsiveness and Hospital Performance

There are a number of studies that have examined the relationship between staff responsiveness and performance of healthcare facilities in various countries. Most of the studies found were conducted in different hospitals with the majority being cross-sectional studies. The review of the below studies focuses on a number of studies conducted with research gaps being identified.

Ahmed, Tarique, and Arif (2017) examined service quality, patient satisfaction and loyalty in the Bangladesh healthcare sector. The study utilized self-administered questionnaires to collect data from 450 patients and relied on exploratory factor analysis, discriminant analysis and independent t-tests in the analysis. The findings indicate that patients perceive tangibles, empathy and responsiveness of the medical institutions as a predictor of the service quality performance. The study indicates that private hospitals have better service quality than public institutions. The study focuses on the entire health sector in Bangladesh, while the current study was limited to the performance of satellite hospitals under Mater Hospital, Kenya.

Joarder, George, Ahmed, Rashid, and Sarker (2017) conducted exploratory research in Bangladesh examining physician responsiveness. The study utilized in-depth interviews among physicians and service users. The findings of the study indicate that the physician responsiveness is constituted by their level of friendliness, respect for clients, guidance and informing patients, gaining the trust of patients and optimizing the benefits of the patients. The study, however, fails to link the level of responsiveness to the performance of the hospitals which is the focus of this research.

Kashkoli, Zarei, Daneshkohan, and Khodakarim (2017) conducted research on the relationship between hospital responsiveness and overall patient satisfaction. The research adopted cross-sectional research focusing on 500 patients who were conveniently sampled in 2015 from two public and three private hospitals. The study relied on a questionnaire in the data collection. The findings indicate that 65% of the variations in patient satisfaction were determined by responsiveness dimensions: quality of basic amenities, respect of human dignity, level of care and involvement in treatment processes. The study was limited to patient satisfaction while the current study examines the performance of the satellite clinics.

Yakob and Ncama (2017) sought to measure the health system responsiveness at the facility level in Ethiopia. The research focussed on the level of performance correlates and implications. The study adopted a cross-sectional survey research design with 492 respondents being selected and a Likert scale questionnaire being utilized in the research. The findings indicate that most of the health facilities performed dismally in the level of autonomy, choice attention and the amenities domains which led to poor responsiveness ranking. The study indicates that improving quality of care, client satisfaction and financial fairness can improve responsiveness performance. The study, however, does not examine how responsiveness affects the performance of satellite clinics.

Wambura (2016) examined the link between service quality and performance improvement in health care at Kenyatta National Hospital. The research adopted a descriptive research design and focused on KNH as the unit of observation. The research utilized structured questionnaires to collect data from patients at the hospital. The study indicated there was a lack of willingness among personnel to respond to patients, there was poor willingness to help patients and there was the inadequate provision of individualized services to the patients. The study indicates there is an overall positive interaction between service quality and performance improvement. The study focuses on Kenyatta National Hospital which is considered Kenya's largest public hospital, while the current study examines Mater Misericordiae Hospital satellite institutions which are privately owned and managed.

2.3.3 Medical Infrastructure and Hospital Performance

There are a number of studies that have examined the relationship between medical infrastructure and performance of healthcare facilities in various countries. Most of the studies found were conducted in different hospitals with the majority being cross-sectional

studies. The review of the below studies focuses on a number of studies conducted with research gaps being identified.

Arvanitis and Loukis (2016) conducted an exploratory study investigating the effects of various types of information communication technology on the innovation and performance of European hospitals. The study conducted an empirical analysis of 743 hospitals drawn from 18 European countries. The study employed econometric analysis and the results indicate that product innovations and process innovation were highly dependent on the availability of ICT personnel, ICT investments and budget. The study further indicates that the utilization of websites and other e-business platforms positively enhanced firm performance. The study was, however, conducted across Europe while current research examines the performance of a private hospital in Kenya.

Salarvand, Azizimalekabadi, Jebeli, and Nazer (2017) examined the challenges experienced by nurses in the implementation of a healthcare reform plan in Iran. The study utilized a qualitative method centre on content analysis. The study purposively sampled 30 respondents for the research. The results indicate that nurses were limited in the implementation of healthcare plans by the unsuitable infrastructure, lack of adequate medical facilities, unfavourable vision and complicated work environment. The study focuses on the implementation of health plans, while the current study examines the performance of private hospitals.

Oluwale, Olaposi, Adedeji, and Ayanlade (2018) studied the impact of technological infrastructure on the quality of service in the Nigerian health sector. The study employed a survey research design and utilized two sets of questionnaires administered to the patients and workers within the healthcare facilities. The findings indicate that there were inadequate manpower and utilities, diagnostic facilities, laboratory equipment and digital systems. The regression results indicate a positive relationship between technological infrastructure and quality of service. The study, however, does not focus on the overall performance of the hospitals.

Okech (2016) conducted a situational analysis on devolution and universal health coverage in Kenya, focusing on health financing, infrastructure and personnel. The research relied on both secondary and primary data collected within all the devolved units in Kenya. The findings indicate that the government has enhanced its commitment towards increasing

revenue allocation in investment towards health infrastructure and personnel. The study notes that there are gaps in the availability of specialized medical equipment, maintenance of equipment and operation of available medical equipment. The study also indicates there is an increased usage of dilapidated infrastructure within the institutions. The study, however, focuses on the devolved health sector and does not examine the effect of health infrastructure on the performance of hospitals.

Nur (2018) examined the association between electronic procurement and procurement performance of private hospitals in Nairobi, Kenya. The research adopted a descriptive research design with quantitative research being utilized. The findings of the research indicate that hospitals have established e-tendering, e-catalogues that have reduced operational costs, lead time and contributed towards efficiency within the private hospitals. The study indicates a positive relationship between electronic procurement and procurement performance. The study, however, focuses only on procurement performance within the private hospitals while the current study examines overall hospital performance.

2.4 Summary of Research Gaps

The table below presents the various knowledge, empirical, and methodological gaps identified in the review of the empirical literature.

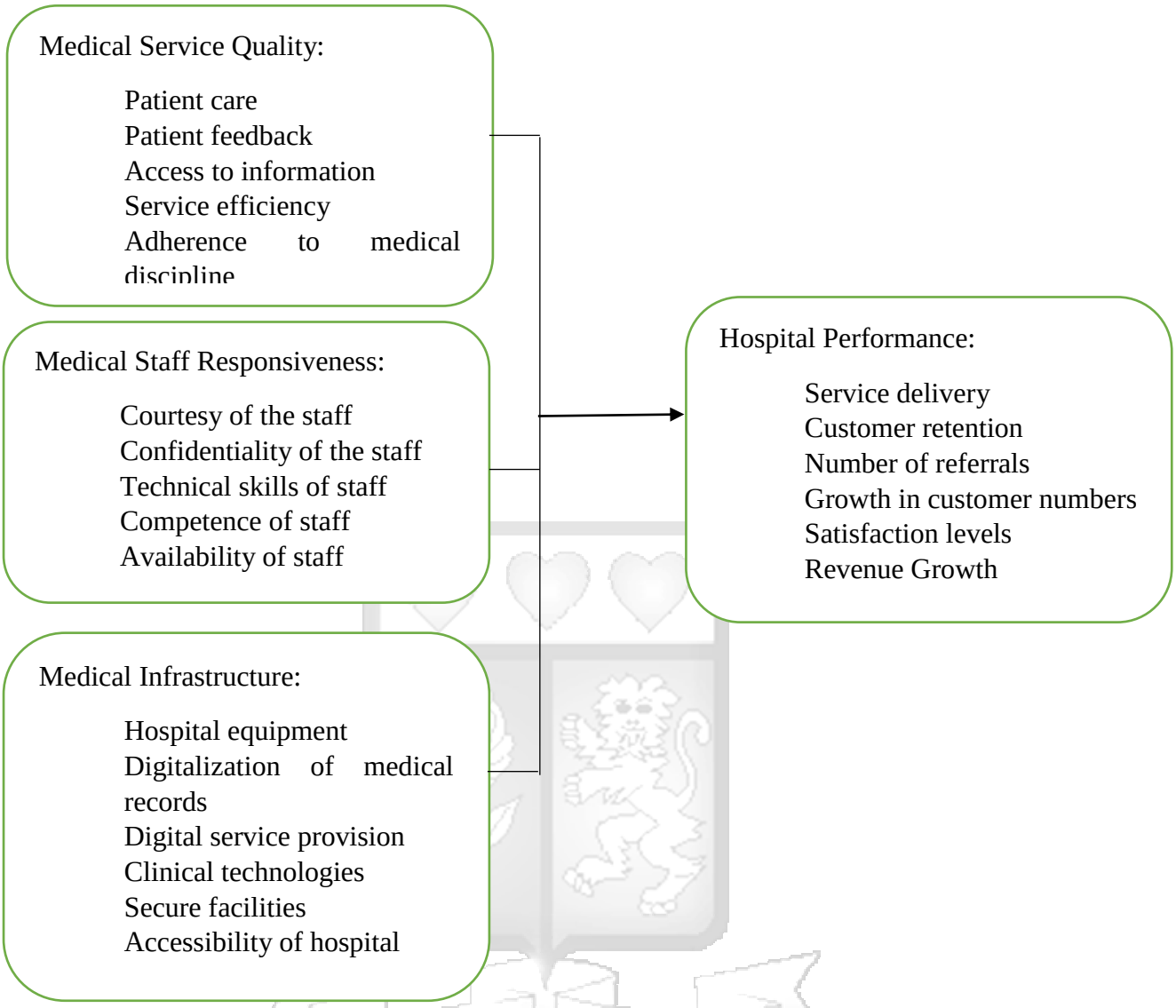
Table 2.1 Research Gaps

Author	Title	Findings	Research Gap
Maina (2016)	Effect of customer perception on the performance of private Hospital in Nairobi	The study indicates that customer perception of hospital staff, the quality of service and efficiency significantly predicted the performance of the hospital	The study focuses on Karen hospital while current research examines Mater Hospital satellite institutions.
Ogunnowo, Olufunlayo, and Sule (2015)	Client perception of service quality at the outpatient	The results indicate that quality assurance and reliability were the most	The study was conducted within a public hospital, while

	clinics of a General hospital in Lagos, Nigeria	important predictor of service quality while responsiveness had major deficiencies within the hospital	current research focuses on private satellite hospitals.
Salarvand, Azizimalekabadi, Jebeli, and Nazer (2017)	Challenges experienced by nurses in the implementation of a healthcare reform plan in Iran	The results indicate that nurses were limited in the implementation of healthcare plans by the unsuitable infrastructure, lack of adequate medical facilities	The study focuses on the implementation of health plans while the current study examines the performance of private hospitals
Wambura (2016)	Service quality and performance improvement in health care at Kenyatta National Hospital	The study indicates there is an overall positive interaction between service quality and performance improvement	The study focuses on Kenyatta National Hospital while the current study examines Mater Hospital satellite institutions
Yakob and Ncama (2017)	Health system responsiveness at facility level in Ethiopia	The study indicates that improving quality of care, client satisfaction, and financial fairness can improve responsiveness performance	The study, however, does not examine how responsiveness affect the performance of satellite hospitals

2.5 Conceptual Framework

A conceptual framework is a set of concepts or variables that are important in understanding an area of study. These concepts are articulated as independent variables. However, it is crucial that one remains sceptical about the validity and reliability of these variables (Adams, Khan, Raeside, & White, 2007). The conceptual framework below contextualizes the relationship between the independent and dependent variables of the research.



The above conceptual framework presents the interaction of the determinants and the performance of satellite hospitals. The study hypothesized the key determinants as the medical service quality, medical staff responsiveness, and medical infrastructure. The dependent variable the performance of the satellite hospital was assessed by; service delivery, customer retention, number of referrals, growth in customer numbers and satisfaction levels.

Table 2.2 Operationalization of Variables

Variable	Indicators	Measurement	Data collection tool	Data analysis

Medical service quality	Patient care Patient feedback Access to information Service efficiency Adherence to the medical discipline	This was assessed by the quality of medical service offered	Structured questionnaire; 5-point Likert scale	Descriptive analysis and inferential analysis
Medical staff responsiveness	Courtesy of the staff Confidentiality of the staff Technical skills of staff Competence of staff Availability of staff	The level of responsiveness of medical personnel	Structured questionnaire; 5-point Likert scale	Descriptive analysis and inferential analysis
Medical infrastructure	Hospital equipment Digitalization of medical records Digital service provision Clinical technologies Secure facilities Accessibility of hospital	The level of infrastructure and facilities	Structured questionnaire; 5-point Likert scale	Descriptive analysis and inferential analysis
Performance of hospital	Service delivery Customer retention Number of referrals Growth in customer numbers Satisfaction levels	This was assessed by performance perception among patients	Structured questionnaire; 5-point Likert scale	Descriptive analysis and inferential analysis

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains in-depth the research methodology that was used in the study. It describes and elucidates the research design, target population, sampling procedures and sample size, research instruments, data collection and analysis procedures the study utilized in solving the research problem.

3.2 Research Design

A research design is a strategy identified to facilitate the integration of all the components of the study with the aim of solving the study problem (Daniel & Sam, 2015). The study utilized a descriptive research design. According to Blaxter, Hughes and Tight (2012), the descriptive design is used to collect information regarding the current status of the phenomena and describe what exists, with respect to variables. Descriptive research gives an accurate and valid representation of the study variables.

3.3 Target Population

Saunders, Lewis, and Thornhill (2016) advance that, population refers to the total collection of elements about which the researcher wishes to make the inference. It is the universe of people, place or things to be investigated. The target population for this study was drawn from patients receiving services from the Mater Misericordiae Hospital satellite clinics in Kenya. MMH has different branches located at Kasarani, Buru Buru, Embakasi, Kayole, Thika, DHC and Westlands. The population was drawn from the 126,986 patients who were served by the hospital within the year 2018. This population was used since it gives a more recent account of the number of patients seeking services at MMH satellite clinics. Kasarani had the highest proportion of Patients handled which is almost double from the next branch. The target population is illustrated in the table 3.1 below.

Table 3.1 Target Population

Location	Number of Patients	% Proportion
Kasarani	40,055	31%
BuruBuru	24,085	19%
Kayole	8,152	6%
Thika	14,724	12%
DHC	19,780	16%
Westlands	20,100	16%
Population	126,986	100%

Source: Mater Hospital (2019)

3.4 Sampling Design and Sample Size

Cooper and Schindler (2014) refer to the sampling frame as part of statistical practice concerned with the selection of individual observations intended to produce some knowledge about a population of concern, especially for statistical inference. It is the list of elements from which the sample is drawn. The sampling frame for this study was drawn from the patients attending mater satellite hospitals. The study utilized convenient sampling in the selection of respondents (Kombo & Tromp, 2006). The sample size of the study was determined using the Krejcie and Morgan table (See Appendix II) that is widely utilized in selecting a sample from a large population. The Krejcie and Morgan table formulae is presented below;

$s = X^2 NP (1-P) \div d^2 (N-1) + X^2 P (1-P)$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Cooper and Schindler (2014) assert that a sample is a smaller but representative group of the total population carved out to determine the information under investigation. Based on the Krejcie and Morgan table, the sample respondents for the study were 384 respondents. The sample respondents were apportioned to the satellite clinics as shown below;

Table 3.2 Sample Respondents

Location	% Proportion	No of Respondents
Kasarani	31%	119
BuruBuru	19%	74
Kayole	6%	23
Thika	12%	46
DHC	16%	61
Westlands	16%	61
Sample Respondents	100%	384

Source: Researcher (2019)

3.5 Data Collection Instruments

Structured questionnaires were used to collect primary data. According to Cooper and Schindler (2014), structured questionnaires are questionnaires that have close-ended questions. Structured questionnaires are simple to administer and relatively inexpensive to analyze. The questionnaire was administered using a mix of drop and pick method as well as Google Forms.

3.6 Data Collection Procedures

The research procedures for this study included the questionnaire as the main data collection tool developed by the researcher based on the research questions. The researcher obtained permission from the University Research Office and consent from the Mater Hospital before undertaking data collection. Thereafter, research assistants were selected and trained for the collection of data including the general administration of the final questionnaires. The study also ensured respondents were informed of their rights to participate in the research. The study further conducted a pilot test. According to Lucas and Donnellan (2012), a pre-test

sample should be between 1% and 10% depending on the sample size. The study piloted the questionnaire with 10% of the sample respondents. The study piloted the questionnaire with 38 respondents with 25 from Kasarani and 13 from Buru Buru both of which had a large proportion of the population.

3.6.1 Reliability Tests of Research Instrument

Sullivan (2011) states that reliability is used to determine if a measurement instrument used in a study gives the same results each time it is used in the same situation with the same type of subjects and whether it gives reliable results. Cronbach alpha was conducted to determine the reliability of the questionnaire. Sullivan notes that Cronbach α value greater or equal to 0.7 is considered reliable for the research constructs hence were adopted in the current study. The findings of the pilot study are shown on the Table 3.3 and 3.4 below.

Table 3.3 Reliability Results

Variable	Cronbach's Alpha	Number of Items
Hospital performance	.874	6
MedicalServiceQuality	.874	6
MedicalServiceResponsiveness	.904	7
Medical Infrastructure	.862	6

The findings of the pilot study indicate that all the study variables had a Cronbach score of above 0.7 thus were deemed appropriate for the research study. The Cronbach scores were as follows; hospital performance (.874), medical service quality (.874), medical service responsiveness (.904), and medical infrastructure (.862).

Table 3.4 Overall Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	Number of Items
.872	4

The findings of the study indicate that the overall reliability scale of variables had a Cronbach score of above 0.7, as indicated above; hence the research instrument was deemed adequate for the research work.

3.6.2 Validity Tests of Research Instrument

Content validity examines whether the items in the questionnaire signify the construct, which is being measured in addition to the scoring, formatting and wording of the instrument (Sekaran, 2003). The validity tests were carried out to assess the length, appropriateness and structure of the questions that were used and necessary modifications were made before the questionnaire was administered to the respondents.

3.7 Data Analysis and Presentation

The research utilized quantitative techniques in the analysis of the research data. The quantitative data were analyzed using descriptive analysis and inferential analysis techniques, with the help of Statistical Packages for Social Sciences (SPSS Version 23). According to Martinelli (2010), descriptive statistics help the researcher to present the data in a more meaningful way thus, allowing easy interpretation of the data. On the other hand, inferential statistics was conducted to examine the association between the research variables. The results of the research were presented using means, standard deviation, correlation matrix, regression summary and the regression coefficients based on the means of each latent variable. The study relied on the following regression model as shown below;

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where;

Y = Dependent variable (performance of satellite hospitals)

α = the model intercept

$\beta_{1\text{-}3}$= Coefficient of independent variables

$\mathbf{X_1}$ – medical service quality

$\mathbf{X_2}$– medical staff responsiveness

$\mathbf{X_3}$ – medical infrastructure

$\boldsymbol{\varepsilon}$ - error Term

3.8 Ethical Considerations

The research observed ethical standards before, during, and after the study was done. Before piloting and actual data collection, the researcher obtained Ethical Approval from the University giving the go-ahead to collect data. The research further obtained a research permit to collect data from the National Commission for Science, Technology and Innovation (NACOSTI). Complete disclosure of the study objective was made to the respondents by way of an introduction letter. Participation in the study was also voluntary and the respondents were made aware, and guaranteed nondisclosure of the information they provided and secrecy of the data source as the questionnaire did not require disclosure of identity.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The fourth chapter of the study focuses on the presentation of the research findings. The analysis of the research data was guided by a quantitative approach, as outlined in the methodology. The findings were presented according to the following sections: response rate, the background information on respondents, the descriptive analysis and the inferential analysis.

4.2 Response Rate

The study conducted research among 384 patients drawn from MMH Satellite clinics within Nairobi. The research was able to obtain 83% (N=318) respondents, while only 17% of the sample respondents were not able to participate in the research study within the prescribed duration. The response rate was deemed adequate as Cooper and Schindler (2014) prescribe a response rate of above 60% as appropriate for quantitative analysis.

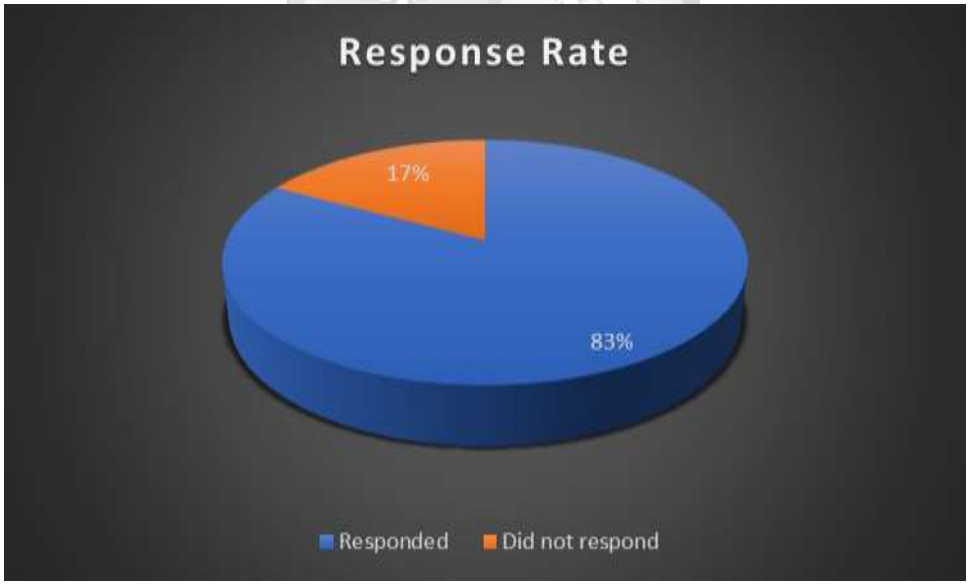


Figure 4.1 Response Rate

4.3 Respondents Profile

The study further sought to examine the background bio data of the research respondents. The results of the same are presented in this section.

4.3.1 Age of Respondents

The findings of the study indicate that 32% of the respondents were aged between 18-28 years, 30% were between ages 29-39 years, 20% were aged between 40-50 years, 11% were aged between 51-60 years while only 7% of the respondents were above 61 years of age. This indicates that all the respondents were above 18 years thus of age to be considered in this research work.

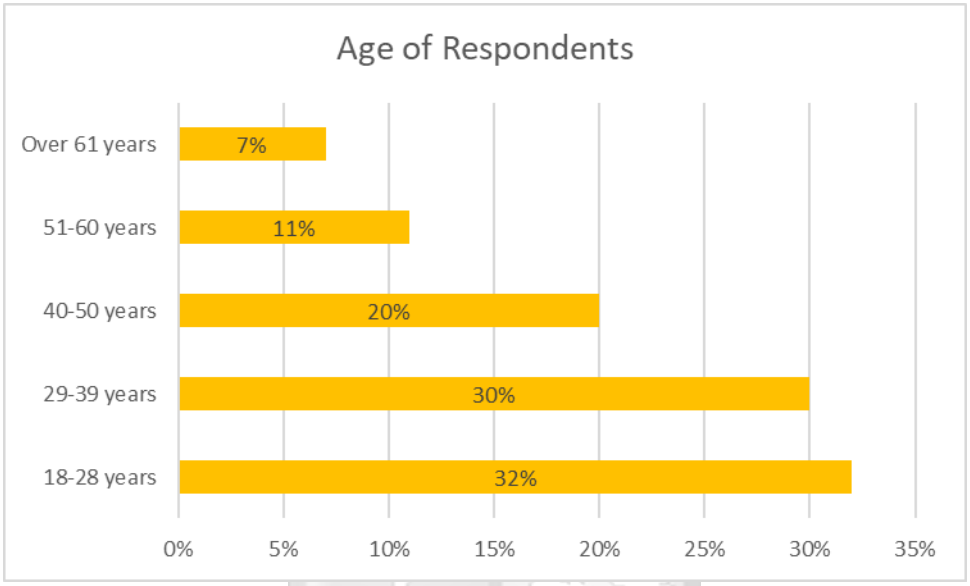


Figure 4.2 Age of Respondents

4.3.2 Gender of Respondents

The research data analysis indicates that the majority of the respondents 59% were female patients, 38% were male patients, while 3% of the respondents preferred not to respond to the gender questions as indicated below. This was done to ascertain that respondents were normally distributed between the gender since none of the gender was given preferential consideration in the selection of respondents. The study shows more females than males participated in this research which indicates a reflection of higher health seeking behaviour in females than males.

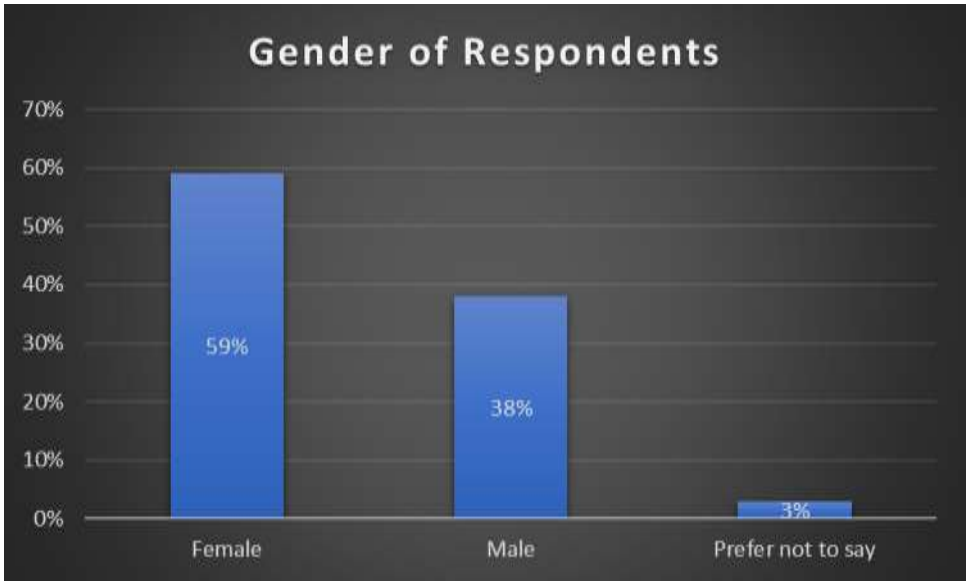


Figure 4.3 Gender of Respondents

4.3.3 Education Level of Respondents

The study also sought to analyze the distribution of educational attainment among the respondents. The results are shown in Table 4.1 below.

Table 4.1 Level of Education

	Frequency	Percent
Diploma	69	21.7
Graduate	144	45.3
O- Level	64	20.1
Postgraduate	41	12.9
Total	318	100.0

Findings above indicate that most of the respondents 45% had attained graduate-level education, 22% had attained diploma level education, and 20% had attained O-level education while only 13% of the respondents had postgraduate education level.

4.3.4 Length of Service Demand

The study further sought to establish the length of time that the respondents have been coming for their medical services at the satellite clinics. The results are shown in Table 4.2 below.

Table 4.2 Length of Service

	Frequency	Percent
Less than 3 years	132	41.5
3-5 years	69	21.7
6-9 years	49	15.4
Over 9 years	68	21.4
Total	318	100.0

The results indicate that most of the respondents 42% have been receiving services at the clinics for less than 3 years, 22% have been receiving services at the satellite clinics for 3-5 years, 21% have received services for more than 9 years while only 15% have received services at the clinics for between 6-9 years. This indicates that most of the respondents have been repeat customers at the satellite clinics showing improvement in demand and sustained utilization of the satellite clinics.

4.4 Patients Perception Information

The study also undertook descriptive analysis to present the findings of the Likert scale questions that were adopted in the study. The research relied on means, standard deviation, and the sum of the responses. The findings are presented in this section. The study utilized the following scale for mean interpretation; Strongly agree = >4.5; Agree = 3.50-4.49, Neither agree nor disagree = 2.50-3.49, Disagree = 1.50-2.49, Strongly disagree = <1.49.

4.4.1 Performance of Hospitals

The dependent variable of the study examined the level of performance of the satellite clinics. The findings are shown in Table 4.3 below.

Table 4.3 Descriptive Statistics for Hospital Performance

	N	Mean	Std. Deviation
I am really satisfied with the level of service quality at the hospital	318	3.80	1.238
I am happy to be a long-term customer and retain my services at the hospital	318	3.82	1.226
I would be more than willing to refer my family and friends to the hospital	318	3.91	1.209
I have witnessed a growth in the number of patients visiting the hospital	318	3.35	1.535
I am happy with the level of efficiency accorded to the patients at the hospital	318	3.47	1.359
I am happy with the level of customer complaints handling at the hospital	318	3.22	1.409
Average	**318**	**3.595**	**1.329**

Results indicate agreement among respondents that they are satisfied with the level of service quality at the hospital, as indicated by mean of 3.80. Findings also show an agreement among respondents that they are happy to be long-term customers and would retain their services at the hospital, as shown by a mean of 3.82 and a high variation of 1.226. The results indicate agreement among respondents that they would be willing to refer family and friends to the hospital as indicated by mean of 3.91.

The findings show that respondents neither agreed nor disagreed that they have witnessed a growth in the number of patients visiting the hospital, as shown by mean of 3.35. The findings also indicate that the respondents neither agreed nor disagreed that they are happy with the level of efficiency accorded to the patients at the hospital as denoted by mean of 3.47. The study also indicates that the respondents were neutral with regards to the level of customer complaints handling at the hospital, as shown by a mean of 3.22 and a high variation of 1.409.

4.4.2 Medical Service Quality of the Satellite Hospital

The first independent variable of the research examined the level of medical service quality within the hospital. The findings are shown below.

Table 4.4 Descriptive Statistics for Medical Service Quality

	N	Mean	Std. Deviation
The hospitals offer adequate patient care during my visits	318	3.81	1.265
The hospital has fostered the efficiency in the offering of medical services	318	3.73	1.254
I am satisfied with the adequacy in access to hospital information and records	318	3.67	1.253
The hospital adheres to the code of ethics in the provision of services	318	4.07	1.184
The hospital has a clearly outlined mission statement and service charter	318	4.08	1.208
The hospital ensures that I receive feedback on any service queries raised promptly	318	3.48	1.438
Average	**318**	**3.81**	**1.267**

In regard to the hospitals offering adequate patient care during my visits, there was agreement among respondents as indicated by mean of 3.81. The results also indicate agreement among respondents that the hospital has fostered the efficiency in the offering of medical services, as shown by a mean of 3.73. Findings also indicate that respondents were in agreement that they are satisfied with the adequacy in access to hospital information and records, as shown by mean of 3.67. Findings of the study show agreement that the hospital adheres to the code of ethics in the provision of services as noted by mean of 4.07.In regard to the hospital having a clear outline mission statement and service charter there was agreement among respondents as shown by mean of 4.08 and variation of 1.208.

The results also indicate neither agreement nor disagreement among respondents that the hospital ensures that they receive feedback on any service queries raised promptly, as indicated by mean of 3.48.

4.4.3 Medical Staff Responsiveness of Satellite Hospitals

The second variable of the study examined the medical staff responsiveness at the satellite hospitals. The results are shown in Table 4.5 below.

Table 4.5 Descriptive Statistics for Medical Staff Responsiveness

	N	Mean	Std. Deviation
I am treated with courtesy by the personnel within the hospital	318	3.96	1.255
The hospital staff always ensures my treatment records are treated with confidentiality	318	3.98	1.311
The staff within the hospital treat other patients with fairness	318	3.99	1.205
The staff who have served me have demonstrated adequate technical skills	318	3.85	1.332
The staff within the hospital have demonstrated professionalism and competence in administering medical care	318	3.81	1.313
There is always an available staff member to take of my medical needs during my hospital visits	318	3.68	1.406
I have been able to receive individualized care from the hospital staff	318	3.68	1.361
Average	**318**	**3.85**	**1.312**

The results show agreement that respondents are treated with courtesy by the personnel within the hospital, as indicated by mean of 3.96. Concerning the hospital staff always ensures my treatment records are treated with confidentiality, there was agreement as indicated by mean of 3.98. Findings also show agreement that the staff within the hospital treat other patients with fairness, as shown by mean of 3.99. In regard to the staffs who have

served me have demonstrated adequate technical skills, there was agreement as indicated by a mean of 3.85. The findings also indicate agreement that the staff within the hospital have demonstrated professionalism and competence in administering medical care as indicated by mean of 3.81. In regard to there is always an available staff member to take of my medical needs during my hospital visits, there was agreement as indicated by mean of 3.68. The results show agreement that respondents have been able to receive individualized care from the hospital staff as noted by mean of 3.68 and a deviation of 1.361.

4.4.4 Medical Infrastructure of Satellite Hospitals

The third variable of the research analyzed the medical infrastructure within the satellite hospitals, and the responses are shown in Table 4.6 below.

Table 4.6 Descriptive Statistics for Medical Infrastructure

	N	Mean	Std. Deviation
The hospital has adequate medical equipment to serve customers without delays	318	3.63	1.381
I have been able to contact the hospital and get feedback through social media platforms	318	3.16	1.520
The hospital has digitalized its service offering for better client-service delivery	318	3.44	1.392
The hospital is located at an adequately accessible location	318	3.90	1.420
The hospital has put in place security measures to ensure the safety of the patients	318	3.75	1.387
I have witnessed increased utilization of clinical technologies in receiving patient care at the hospital	318	3.51	1.507
Average	**318**	**3.565**	**1.435**

In regard to the hospital has adequate medical equipment to serve customers without delays, there was agreement as indicated by a mean of 3.63 and a deviation of 1.381. Respondents neither agreed nor disagreed that they have not been able to contact the hospital and get feedback through social media platforms, as indicated by a mean of 3.16. The findings

indicate respondents neither agreed nor disagreed that the hospital has digitalized its service offering for better client-service delivery, as shown by a mean of 3.44. The results also show an agreement among respondents that the hospital is located at an adequately accessible location, as indicated by a mean of 3.90. Findings further indicate agreement that the hospital has put in place security measures to ensure the safety of the patients, as shown by mean of 3.75. The findings further show an agreement among respondents that they have witnessed increased utilization of clinical technologies in receiving patient care at the hospital, as shown by a mean of 3.51 and a deviation of 1.507 indicating high dispersion in responses obtained.

4.5 Inferential Analysis

The research sought to determine the interaction between the various variables of the research, as shown in the conceptualization. The study adopted inferential analysis using correlation and regression analysis to determine both the association and magnitude of the relationship between the research variables respectively.

4.5.1 Correlation Analysis

The study adopted a correlation analysis to examine the type of association between the research variables. The findings are shown below.

Table 4.7 Correlation Results

		Hospital Performance
Medical Service Quality	Pearson Correlation	.678**
	Sig. (2-tailed)	.000
	N	318
Medical Staff Responsiveness	Pearson Correlation	.622**
	Sig. (2-tailed)	.000
	N	318
Medical Infrastructure	Pearson Correlation	.444**
	Sig. (2-tailed)	.000
	N	318

**. Correlation is significant at the 0.01 level (2-tailed).

The study sought to examine the relationship of medical service quality, medical service responsiveness, and medical infrastructure on the hospital performance of satellite clinics.

The first objective examined the effect of medical service quality and the results indicate a positive and significant relationship as indicated by P= .678, Sig-value = .000<.05. Awuor and Kinuthia (2013) indicates that total quality management practices in hospitals have been integral in fostering service provision within hospitals in Kenya.

The second objective examines the association between medical staff responsiveness and hospital performance, and the findings indicate there was a positive and significant effect of medical staff responsiveness on performance P= .622, Sig-value = .000<.05.Ahmed, Tarique and Arif (2017) indicate that patients perceive tangibles, empathy and responsiveness of the medical institutions as key to enhancing their service quality and performance.

The third objective examines the association between medical infrastructure and hospital performance, and the findings indicate there was a positive and significant effect of medical infrastructure on performance P= .444, Sig-value = .000<.05. Arvanitis and Loukis (2016) similarly note that utilization of e-business platforms, technological infrastructure were key to performance in hospitals.

4.5.2 Regression Analysis

The main objective of the research was to examine the determinants of the performance of satellite clinics at Mater Misericordiae Hospital in Nairobi, Kenya. The study sought to determine the magnitude of the relationship between the selected variables and the performance of the satellite clinics. The study adopted a linear regression analysis.

Table 4.8 Regression Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.702[a]	.493	.488	4.49013

a. Predictors: (Constant), Medical Infrastructure, Medical Service Quality, Medical Staff Responsiveness

The study sought to examine the effect of medical service quality, medical service responsiveness, and medical infrastructure on the hospital performance of satellite clinics. The findings of the regression analysis above indicate that holding all other factors constant

49.3% (R^2= *.493*) variations in the hospital performance of satellite clinics are determined by the level of medical service quality, medical service responsiveness and medical infrastructure at the satellite clinics. Salarvand, Azizimalekabadi, Jebeli and Nazer (2017) notes that having adequate medical facilities and a conducive work environment are key to healthcare policy implementation.Joarder, George, Ahmed, Rashid and Sarker (2017) also note that physician responsiveness is key to optimizing service benefits to patients. Sarwar (2014) notes that healthcare service quality is key to improving performance within hospitals.

4.5.3 ANOVA Analysis

The study relied on a linear regression analysis to examine the magnitude of the interaction between the research variables. To examine the statistical significance of the utilized model, the study adopted the ANOVA analysis.

Table 4.9 ANOVA Summary

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6151.326	3	2050.442	101.702	.000[b]
	Residual	6330.652	314	20.161		
	Total	12481.978	317			

a. Dependent Variable: Hospital Performance

b. Predictors: (Constant), Medical Infrastructure, Medical Service Quality, Medical Staff Responsiveness

The ANOVA results showed an F value of 101.702, which is greater than F- (critical f; 1.162), with a significance value of .000, which is less than 0.05 hence the model was deemed statistically significant. The study thus holds that the regression model was statistically significant in predicting the relationship between medical service quality, medical service responsiveness and medical infrastructure and the hospital performance of satellite clinics.

4.5.4 Regression Coefficients

The research further sought to examine the significance of the relationship of the variable using the coefficients of the regression (β), the intercept of the model (α), and the significance of all the coefficients.

Table 4.10 Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.120	1.057		3.900	.000
	Medical Service Quality	.529	.065	.503	8.076	.000
	Medical Staff Responsiveness	.254	.057	.296	4.470	.000
	Medical Infrastructure	.069	.054	.073	1.285	.000

a. Dependent Variable: Hospital Performance

The resultant research model is as follows;

$Y = 4.120 + .529X_1 + .254X_2 + .069X_3 + 1.057$

The results in table 4.10 indicate a constant α = 4.20 is significantly different from 0 since the p-value 0.000<0.05. The beta value *(β) =.529* is significantly different from 0 since the p-value 0.000<0.05. The regression coefficients indicate that a change in the level of medical service quality by one unit will result in a positive .529 units change in the performance of the hospital satellite clinics when all other factors are held constant. Ogunnowo, Olufunlayo, and Sule (2015) indicate that overall perceived service quality improves performance in hospitals.Maina (2016) similarly notes that customer perception of staff and service quality predicted firm performance.

The results in table 4.10 indicate a constant α = 4.20 is significantly different from 0 since the p-value 0.000<0.05.The beta value *(β) =.254* is significantly different from 0 since the p-value 0.000<0.05. The regression coefficients indicate that a change in the level of medical staff responsiveness by one unit will result in a positive .254 change in the performance of the hospital's satellite clinics when all other factors are held constant. Kashkoli, Zarei, Daneshkohan, and Khodakarim (2017) indicate that responsiveness within hospitals predicted

improvement of customer care and hospital effectiveness. Wambura (2016) notes that willingness to help patients and individualized services improve hospital performance improvement.

The results in table 4.10 indicate a constant $\alpha = 4.20$ is significantly different from 0 since the p-value 0.000<0.05.The beta value $(\beta) = .069$ is significantly different from 0 since the p-value .000<0.05. The regression coefficients indicate that a change in the level of medical infrastructure by one unit will result in a positive .069 change in the performance of the hospital satellite clinics when all other factors are held constant. Oluwale, Olaposi, Adedeji, and Ayanlade (2018) indicate that improving diagnostic facilities and laboratory equipment was key to enhancing quality service provision. Okech (2016) notes that adequacy in specialized medical equipment is essential to improving healthcare service provision.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The fifth chapter of the research focuses on the summary of the research, the discussion of the results of the study, the conclusions drawn from the study, and the recommendations for practice and policy within the hospital. The chapter additionally presents the suggestions for further research work within the satellite clinics.

5.2 Summary

The provision of quality healthcare services is at the core of most hospital's mandate. However, in many instances, for-profit hospitals seem to put more consideration on their bottom-line at the expense of quality healthcare. This research sought to examine the key factors that patients deem necessary for fostering their service experience and can overall predict the performance of satellite clinics. The study examined the effect of medical service quality, medical staff responsiveness and medical infrastructure on the performance of the satellite clinics of MMH. The research was grounded on the balance scorecard approach and the resource-based view theory.

The study adopted a descriptive approach with quantitative data being considered for the research. The research relied on a structured research questionnaire in the data collection. The research was able to obtain an 83% response rate. The results indicate that all of the respondents were above 18 years of age with 59% of the respondents being female patients. Findings note that the majority of the respondents 80% had more than a diploma level education qualification and majority at 58.1% were repeat clients having received services from the hospital for more than three years.

5.3 Discussion of Findings

5.3.1 Performance of Hospitals

The findings of the research indicate that most of the patients were in agreement that they are satisfied with the quality of service, the retention of their services, and willingness to refer their family and friends to the hospital. This indicates high level of satisfaction with regards to quality of service which has resulted in loyalty hence retention and referrals. Ozcan(2014) indicates that quality care and cost efficiency are key to improved performance of hospitals. Letting (2011) notes that the performance of the hospital is highly dependent on the level of customer satisfaction as well as the rate of retention and referral of new patients. Health Information and Quality Authority (2013) also points out that enhanced efficiency and satisfaction with the quality of services is integral to hospital performance.

The study also shows that the patients neither agreed nor disagreed with the level of efficiency accorded to them at the hospital as well as the level of handling of customer complaints. This means some were satisfied but some were not satisfied with the level of efficiency and as well as the level of handling of customer complaints. These areas need to be addressed in order to increase patient satisfaction and hospital performance. Awuor and Kinuthia (2013) also indicated that failure to meet information dissemination and feedback system has led to a lack of adequate service provision within private hospitals. This was supported by Schwarting, Bitar, Arya and Pfeiffer(2011) who note that effectiveness, satisfaction and complaints handling are integral to any hospital's performance.

5.3.2 Medical Service Quality

The research shows that the respondents were in agreement that the satellite clinics have been able to offer adequate healthcare, they have fostered efficiency in medical services offering, the adequacy in access to hospital information as well as adherence to code of ethics in service provision. York and McCarthy (2011) note that patients will be more satisfied with the hospital that meets their considerations, acceptance and popularity of their health service provision. Kondasani and Panda (2015) also found out that interaction with customers and the quality of facilities within the hospitals were integral to improved medical effectiveness. Owusu-Kwateng, Lumor and Acheampong (2019) point out that improved service quality was essential in predicting patient satisfaction and hospital performance.

The study also indicates that the respondents were neither in agreement nor in disagreement with the feedback systems and the response to service queries raised. This means that while some patients were satisfied with how queries raised were handled some were not hence the need to address this aspect of service. Musyoka, Ochieng and Nzioki (2016) indicate that hospitals should strengthen their internal processes and communication with the need to improve service quality in hospitals.Pugh et al. (2007) also posit that technical quality and performance to care should be essential in all hospitals. Fiala (2012) similarly indicates that having adequate clinical skills and treatment protocols foster the service quality within hospitals.

The results of the study determined that the variable medical service quality shows a positive and significant relationship to hospital performance as indicated by a P of 0.678. The regression coefficients indicate that a change in the level of medical service quality by one unit will result in a positive .529 units change in the performance of the hospital's satellite clinics when all other factors are held constant.

5.3.3 Medical Staff Responsiveness

The results of the research show agreement among respondents that the hospital staff were courteous; they ensure treatment records are confidential and other patients are treated with fairness. Ahmed, Tarique, and Arif (2017) note that medical staff responsiveness and empathy to their patients is key to improving loyalty within the healthcare sector. Kashkoli, Zarei, Daneshkohan and Khodakarim (2017) found out that responsiveness in terms of dignity and level of care is key to improving satisfaction among patients. Ismail et al. (2013) also indicate that interpersonal relations with clients enhance satisfaction with services and enhance return visits.

The research finding also show that staff with the hospital have adequate technical skills and demonstrate professionalism in service provision. Rashid and Jusoff (2009) note that technical accuracy in diagnosis and meeting of professional specification enhances customer satisfaction. Yakob and Ncama (2017) also note that improving quality healthcare and financial fairness can improve responsiveness and performance. The findings also indicate that staff members are able to meet the medical needs of the respondents, and they do offer individualized care. Wambura (2016) notes that lack of individualized care, inadequate provision of services to patients and willingness has limited the performance of hospitals.

The results of the study determined that the variable medical staff responsiveness shows a positive and significant relationship to hospital performance as indicated by a P of 0.622. The regression coefficients indicate that a change in the level of medical staff responsiveness by one unit will result in a positive .254 change in the performance of the hospital satellite clinics when all other factors are held constant.

5.3.4 Medical Infrastructure

Findings indicate that respondents were in agreement that there is adequate medical equipment within the hospital, the location of the hospital is ideal and accessible to patients and adequate security measures have been put in place. Salarvand, Azizimalekabadi, Jebeli and Nazer (2017) notes that adequate medical facilities and suitable infrastructure can strengthen hospital service provisions. Oluwale, Olaposi, Adedeji and Ayanlade (2018) notes that having adequate infrastructure has led to improved quality of service. The study also indicates agreement that there has been an increase in the utilization of technologies in patient care offerings within the hospital. Mpinga and Chastonay (2011) note that having adequate patient amenities and facilities foster provision of quality service in hospitals.

The respondents neither agreed nor disagreed that they have been able to contact the hospital and get feedback though social media platforms. There is need to explore and leverage social media platform in service provision. Respondents neither agreed nor disagreed that the hospital has digitalised its services offering for better client-service delivery. This means there are clients who would like to see the hospital digitalize their services more than it has. Oluwale, Olaposi, Adedeji, and Ayanlade (2018) notes that the lack of adequate implementation of electronic infrastructure has limited the effectiveness and efficiency in hospitals. Araújo, Barros, and Wanke (2014) concluded that new technologies have enhanced the specialization of services, efficiency and service provision in hospitals.

The results of the study determined that the variable medical infrastructure shows a positive and significant relationship to hospital performance as indicated by a P of 0.444.The regression coefficients indicate that a change in the level of medical infrastructure by one unit will result in a positive .069 change in the performance of the hospital satellite clinics when all other factors are held constant.

5.4 Conclusions

The research concludes that the hospital has been able to improve service provision within satellite clinics by maintaining the level of efficiency in medical service offerings, ensuring there is adequacy in access to hospital information and records, and ensuring there is adequate access to healthcare services. The study indicates that medical service quality positively influences hospital performance P= .678, Sig-value = .000<.05.

The research further concludes that the medical facilities have maintained increased levels of courteousness, confidentiality and professionalism in serving the patients. The research further notes that medical staffs within the hospital have exhibited adequate technical skills and professionalism in service provision. The study further concludes that individualized service care has been experienced within the hospital. The research concludes that medical staff responsiveness positively influences hospital performance P= .622, Sig-value = .000<.05.

The research concludes that the adequacy of medical equipment and accessibility of the hospital has been key in improving service provision. The research concludes that the clinics have maintained adequate security and accessibility to facilities. The research concludes there is increased utilization of clinical technologies in serving patients at the clinics. The research further concludes that the satellite clinics and the hospital, in general, have adopted limited social media engagements which may hamper service provision. The research further concludes that the availability of medical infrastructure positively influences hospital performance P= .444, Sig-value = .000<.05.

5.5 Recommendations

The findings indicate that 49.3% (R^2= *.493*) variations in the hospital performance of satellite clinics are determined by the level of medical service quality, medical staff responsiveness, and medical infrastructure at the satellite clinics. The research draws the following recommendations:

The satellite clinics should enhance performance through continually improving the quality and efficiency of service offered. It is recommended that the hospital maintains professionalism within the hospital staff ensuring adherence to the code of ethics in provision

of health care. The hospital should also ensure there is adequate number of medical staff within the satellite clinics to enhance efficiency in provision of quality healthcare. The research further recommends that the hospital should regularly take their personnel for training on handling patients to ensure professionalism and responsiveness in the provision of healthcare services. The study further recommends that the hospital should maintain and augment individualized service offering advanced to patients to enhance performance.

The study further recommends that the management should explore and improve the adoption of modern technologies and utilization of digital platforms to enhance their service provision.

Policy-wise the study recommends that the hospital should come up with adequate guidelines to support performance. This can be achieved by harmonizing the results of this study in future decision making in expanding the number of satellite clinics. The research further recommends that other private hospitals can borrow from the Mater Misericordiae Hospital model in coming up with satellite clinics which will enhance the delivery of quality healthcare to their clients and thus enhance their performance. Further, county governments and the Ministry of Health can leverage research findings in integrating quality management practices geared towards enhancing service provision and attaining better performance of hospitals across the country.

5.6 Areas for Further Research

The study suggests that due to the limited level of utilization of digital platforms and social media in the provision of services within hospitals, further research work should be undertaken to examine the effect of digital strategies on service quality delivery within hospitals in Kenya. The research suggests that a further study should be conducted to examine qualitatively how the service quality (SERVQUAL) model affects performance.

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APPENDICES

Appendix I: Questionnaire for Patients

This questionnaire seeks to collect information on the key components of the medical service quality, the medical personnel responsiveness, the medical infrastructure at the facility and the perceived indicators of performance. Your participation in this research is voluntary and at no time will you be required to indicate your identity.

Part A: Background Information

Age Bracket

Below 35 years [ ]

36 – 45 years [ ]

46 – 55 years [ ]

56 and above [ ]

Gender

Male [ ]

Female [ ]

Education Level

O- Level [ ]

Diploma [ ]

Graduate [ ]

Post graduate [ ]

Others (Specify)……

How long have you been receiving medical services from Mater Hospital?

Less than 3 years [ ] 3-5 years [ ]

6-9 years [ ] Over 9 years [ ]

PART B: DETERMINANTS OF THE PERFORMANCE OF SATELLITE CLINICS AT MATER MISERICORDIAE HOSPITAL IN NAIROBI, KENYA

Please tick the level of agreement of the following statements.

The following statements sought to establish how the level of performance of within the satellite hospitals. Please indicate in the table with a tick (√) your level of agreement based on the below scale:

5= strongly Agree 4= Agree 3= Neither Agree nor Disagree 2= Disagree 1= Strongly Disagree

No	Performance of the Satellite hospital	1	2	3	4	5
	I am really satisfied with the level of service quality at the hospital					
	I am happy to be a long-term customer and retain my services at the hospital					
	I would be more than willing to refer my family and friends to the hospital					
	I have witnessed a growth in the number of patients visiting the hospital					
	I am happy with the level of efficiency accorded to the patients at the hospital					
	I am happy with the level of customer complaints handling at the hospital					

The following statements sought to establish how the level of medical service quality of within the satellite hospitals. Please indicate in the table with a tick (√) your level of agreement based on the below scale:

5= strongly Agree 4= Agree 3= Neither Agree nor Disagree 2= Disagree 1= Strongly Disagree

No	Medical Service Quality of the Satellite hospital	1	2	3	4	5
	The hospitals offer adequate patient care during my visits					
	The hospital has fostered the efficiency in the offering of medical services					
	I am satisfied with the adequacy in excess of hospital information and records					
	The hospital adheres to the code of ethics in the provision of services					

	The hospital has a clearly outline mission statement and service charter					
	The hospital ensures that I receive feedback on any service queries raised promptly					

The following statements sought to establish how the level of medical staff responsiveness of within the satellite hospitals. Please indicate in the table with a tick (√) your level of agreement based on the below scale:

5= strongly Agree 4= Agree 3= Neither Agree nor Disagree 2= Disagree 1= Strongly Disagree

No	Medical Staff Responsiveness of the Satellite hospital	1	2	3	4	5
	I am treated with courtesy by the personnel within the hospital					
	The hospital staff always ensures my treatment records are treated with confidentiality					
	The staff within the hospital treat other patients with fairness					
	The staff who have served me have demonstrated adequate technical skills					
	The staff within the hospital have demonstrate professionalism and competence in administering medical care					
	There is always an available staff member to take of my medical needs during my hospital visits					
	I have been able to receive individualized care from the hospital staff					

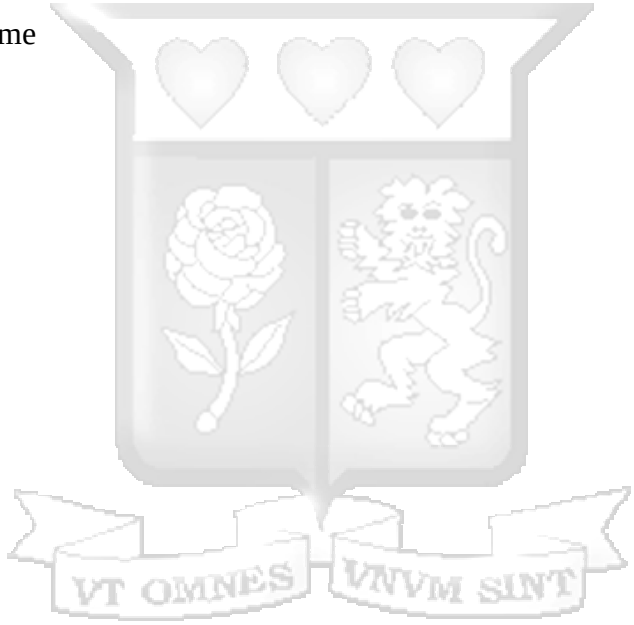
The following statements sought to establish how the level of medical infrastructure of within the satellite hospitals. Please indicate in the table with a tick (√) your level of agreement based on the below scale:

5= strongly Agree 4= Agree 3= Neither Agree nor Disagree 2= Disagree 1= Strongly Disagree

No	Medical Infrastructure of the Satellite hospital	1	2	3	4	5
	The hospital has adequate medical equipment to serve customers without delays					

	I have been able to contact the hospital and get feedback through digital platforms					
	The hospital has digitalized its service offering for better client-service delivery					
	The hospital is located at an adequately accessible location					
	The hospital has put in place security measures to ensure the safety of the patients					
	I have witnessed increased utilization of clinical technologies in receiving patient care at the hospital					

Thank you for your Time



Appendix II: Krejcie and Morgan Table

Table for Determining Sample Size for a Given Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Source: Krejcie & Morgan, 1970

Appendix III: Research Authorization Letter

Ole Sangale Rd, Madaraka Estate,
P.O Box 59857 00200, Nairobi, Kenya.
Cell: +254 703 414/6/7, Twitter: @SBSKenya
Email: info@sbs.ac.ke or visit www.sbs.strathmore.edu

Strathmore UNIVERSITY
BUSINESS SCHOOL

Monday, 20 January 2020

RE: FACILITATION OF RESEARCH – RHODA MUTIA

This is to introduce Rhoda Mutia who is a Master of Business Administration in Health Care (MBA-HCM) Student at Strathmore University Business School, admission number MBA-HCM 85125/15. As part of our MBA-HCM Program, Rhoda is expected to do applied research and undertake a project. This is in partial fulfilment of the requirements of the MBA-HCM course. To this effect, she would like to request for appropriate data from your organization.

Rhoda is undertaking a research paper on **"Determinants of the Performance of Satellite Clinics: A Case Study of Mater Misericordiae Hospital in Nairobi, Kenya."** The information obtained from your organization shall be treated confidentially and shall be used for academic purposes only.

Our MBA-HCM seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and shall be willing to provide any further information if required.

Yours sincerely,

Veronica Muniu

Program Manager - MBA in Healthcare Management

Appendix IV: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **420470**

Date of Issue: **10/February/2020**

RESEARCH LICENSE

This is to Certify that Dr.. Rhoda Chepkoech Mutia of Strathmore University, has been licensed to conduct research in Nairobi on the topic: Determinants of the performance of satellite clinics a case study of mater misericordiae hospital in nairobi Kenya for the period ending : 10/February/2021.

License No: **NACOSTI/P/20/3862**

420470

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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