THE INFLUENCE OF ISO CERTIFICATION ON EFFICIENCY, CUSTOMER SATISFACTION AND SERVICE QUALITY IN HEALTHCARE INSTITUTIONS: THE CASE OF THE MATER HOSPITAL

BY
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UNITED STATES INTERNATIONAL UNIVERSITY-AFRICA

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A Project Report Submitted to the Chandaria School of Business in Partial Fulfilment of the Requirement for the Degree of Masters in Business Administration (MBA)

UNITED STATES INTERNATIONAL UNIVERSITY- AFRICA

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STUDENT’S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: __________________________ Date: __________________________
Lilian A. Agai (ID No. 631924)

This project has been presented for examination with my approval as the appointed supervisor.

Signed: __________________________ Date: __________________________
Mr. Fred Newa

Signed: __________________________ Date: __________________________
Dean, Chandaria School of Business
ABSTRACT

The general objective of the study was to investigate the influence of ISO certification on efficiency, customer satisfaction and service quality in healthcare institutions: a case of Mater hospital. The study was guided by the following specific objectives: To investigate the influence of ISO certification on efficiency at Mater hospital; to investigate the influence of ISO certification on customer satisfaction at Mater hospital and to investigate the influence of ISO certification on service quality at Mater hospital.

This study adopted a descriptive research design. A descriptive research design is a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way. The target population of the study was customers of Mater Hospital outpatient services. The researcher targets outpatient customers for duration of one week whose average number per day is 230 and for five working days and therefore translate to a target population of 1,150 respondents. The study adopted systematic sampling technique to achieve the sample size for the study which was 295 respondents.

In regard to influence of ISO certification on efficiency at Mater Hospital. The study findings showed that the most ranked dimension of efficiency at Mater Hospital was the utilization of resources in providing service delivery. This findings suggest that there were efforts to use material, financial and human resources to improve service delivery to customers after ISO certification of Mater Hospital.

In terms of the influence of ISO certification on customer satisfaction at Mater Hospital. The study findings showed that there was somewhat general satisfaction with the institutions service delivery. Further, when we come to the dimensions of customer satisfaction, the patients indicated that the time spent with the doctor was poor. This findings suggest that the physicians at Mater Hospital although providing adequate service delivery are fast during consultation with patients.

In regard to the influence of ISO certification on service quality at Mater Hospital. The study findings showed that among the five dimensions measured, empathy and responsiveness were the highly ranked dimensions. This means that the personnel and staff at Mater Hospital are caring and take a personal interest in their patients (empathy) and were also fast in receiving patients at the reception (responsiveness) and enquire whether they were served.
The study concludes that in regard to efficiency at Mater Hospital after ISO certification there was an improvement in utilization of resources to provide medical care and also in record retrieval. The study concludes that an influence of ISO certification has been on the information process at mater Hospital. The study concludes that in regard to customer satisfaction and healthcare service delivery at Mater Hospital; the most valued factors among patients were financial and time factors. The study concludes that empathy and responsiveness were the most significant effects of ISO certification at Mater Hospital based on the study findings.

The study recommends for the management of Mater Hospital to improve the design of the outpatient service clinic in order to provide more privacy and confidentiality to patients’. This improvement should include to increase the number of attendants at the reception and also the number of consulting practitioners to address time-related issues in service delivery and Management should make sure that they have up to date equipment to provide diagnostic services and information processing.
ACKNOWLEDGEMENT

I express my deep felt gratitude to all the people who offered their support and assistance to me. In particular, I thank my supervisor, Prof. Francis Wambalaba, for offering a lot of guidance and assistance in coming up with this research project. My gratitude also goes to my project supervisor Mr. Fred Newa for guiding me through the project completion. Gratitude also goes to my family and friends for their understanding and support during the many hours I was doing the project. I cannot forget also to acknowledge the reference of other writers for their work which assisted me a lot in coming up with the project. Lastly, I would like to thank the Almighty God for providing the resources and energy to make this project become a reality.
DEDICATION

This work is dedicated to my family and friends whose encouragement and support gave me the drive to carry on. They are all my inspiration and mentors.
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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of the Problem

Arauz and Suzuki (2004) indicate that ISO quality management standard was launched in December 2001. More than 1 million entities have been certified. There have been four versions of the ISO quality management standard since its inception. The first series was introduced in 1987 with the ISO 9000 series that promoted standardisation of activities within an organisation. These standards served the purpose of governing the quality management systems in operation. The quality guideline was first revised in 1994 (ISO 9000:1994) and according to Schonberger and Knod (2007) the changes included making a quality manual a requirement rather than an option; intensified and more frequent references to the need to establish and document procedures and greater emphasis that the standards could be used in a wider range of organisations regardless of size or type of operation. There were four standards that assisted with implementation of the standard (Evans, 2007).

The subsequent revision of the standard (ISO 9000:2000) was carried out in order to update the standard as required by the ISO procedural rules. The ISO 9000:2000 family of standards have been developed to assist organisations, of all types and sizes, to implement and operate effective quality management systems (Abraham, Crawford, Carter and Mazotta, 2010). The result of this revision reduced to three quality management standards ISO 9000:2000, ISO 9001:2000 and ISO 9004:2000. ISO 9000 defines the fundamental terms and definitions used in this family of standards; ISO 9001 sets out the requirements used to assess the organisation’s ability to meet customer and applicable regulatory requirements in order to achieve customer satisfaction and ISO 9004 provides detailed guidance to an organisation for the continual improvement of its quality management system in order to achieve and maintain customer satisfaction. The role of ISO 9004 has changed from a guide for implementation to a guide for performance improvement. The ISO 9001:2000 replaced ISO 9001, ISO 9002 and ISO 9003. The new standards were developed around customer focused organisation; leadership; involvement of people; process approach; systems approach to management; continual improvement; factual approach to decision making and mutually beneficial supplier relationships (Taríl, Azorín and Heras, 2012).
Goetsch and Davis (2002) explained that the revised standard (ISO 9001:2000) is closely aligned with the Total Quality Management philosophy and that the major changes include increased focus on top management commitment, customer satisfaction, emphasis on processes and continual improvement. TQM is a concept that has evolved over time and continues to evolve. TQM have changed the face of business as we know it today (Arauz and Suzuki, 2014). Even though the bottom line for business has always been focused on profit as a benchmark for success, much disagreement and confusion has existed from the time of the industrial revolution to the present on how to achieve that goal. By making a good-quality product or service that sells itself and works reliably for the customer, resulting in customer satisfaction while maintaining the lowest costs possible and selling at the best price the market will bear is normally associated with the principles of TQM. TQM principles have determined that individual ownership and pride in workmanship for all departments and employees results in a better product (Randeree, Mahal and Narwani, 2012).

On the other hand TQM refers to a management process and a set of disciplines that are coordinated to ensure that the organization consistently meets and exceeds customer requirements. TQM engages all divisions, departments, and levels of organization (Bhatia and Goyal, 2002). The goal is to deliver the highest value for the customer at the lowest cost, while achieving reasonable profit and economic stability for the hospital (Morehouse, 1996). This is reinforced by Ograjensek and Thyregod (2014) who suggest that a more process based structure has been introduced in ISO 9001:2000 together with a greater focus on continuous quality improvement, customer orientation and evidence based decision making. Zuckerman (1999) contends that the focus of the revised standard on organisational processes could lead to enhanced continuous improvement and customer satisfaction. Conti (1999) believes that the ISO 9001:2000 standard represents a real step forward in quality, since it aims at assuring product quality and customer satisfaction. This is made possible, in part, because the standard specifies requirements for the quality management system to provide confidence that customer needs and requirements are met. West (2000) suggests that the requirement of the ISO 9001:2000 standard to measure customer satisfaction is one of the ways to determine whether customer needs and requirements are being met.
According to West, Cianfrani and Tsiakals (2000), the revised standard sets out requirements for organisations with respect to: monitoring and measuring information on customer satisfaction or dissatisfaction; planning of activities for the continual improvement of the quality management system; the evaluation of effectiveness of training of human resources and the provision of facilities and work environment necessary to achieve conformity. Furthermore, they believe that top management should communicate the importance of meeting customer and regulatory requirements which include ensuring that the needs and expectations of customers are understood, translated into internal requirements and met. It is expected that these revisions to the standards will put an end to organisations implementing the ISO 9001 quality management standard purely as a marketing strategy. In 2008, ISO 9001:2008 was fine tuned to include new requirements and a sharper customer focus in the long term and inform organisations on the merits of ISO 9001 certification.

There has been a great deal written about the shortcomings of the ISO 9000:1994 version of the standard. According to Markland, Vickery and Davis (2005), certification does not necessarily mean that an organisation produces a quality product. They contend that certification is based on an organisation’s ability to establish procedure by precisely documenting its processes and then demonstrating that it is continuing to follow prescribed procedures. Markland, Vickery and Davis (1995) are of the belief that ISO certification guarantees consistency, not quality, and that it is not customer focused. Moreover, since there is a substantial cost factor associated with ISO registration, questions arise as to whether there is justification for expenditure on a system of quality standards that does not guarantee quality, let alone an improvement in quality.

Beirao and Cabral (2012) argue that the motive for ISO certification determines the impact of implementation on the performance of the organisation. Furthermore, they are of the belief that organisations which implement ISO 9001 because of customer or supplier pressure, without believing in the benefits of the implementation of a quality system, are less likely to get positive results. One of the criticisms aimed at the ISO 9001 quality management standard is that organisations seek certification purely for the purpose of marketing. Douglas, Coleman and Oddy (2003), found in a survey of United Kingdom organisations that the leading reasons for implementation of the standard included qualifying for tenders; improving customer service; improving organisational efficiency; and marketing benefits which was ranked fifth of a total of nine. Thus, it can
be inferred that there may be multiple motives for the implementation of the ISO 9001 quality management standard and marketing may be one and not the only reason for it.

In order to obtain ISO 9001 certification, an organisation has to furnish thorough documentation of its quality processes. This includes methods used to check quality, methods and extent of worker training, work instructions, inspection programmes and statistical process-control tools used (Reid and Sanders, 2005). Certification is obtained when the quality system has been assessed by a competent, registered authority as conforming to the requirement of the ISO 9001 standard (Krajewski and Ritzman, 2005). According to Goetsch and Davis (2002), the rationale for obtaining ISO 9001 certification should include improving quality and consistency of a product or service; enhancing organisational performance and having an internationally recognised quality management system. However, at Mater Hospital it fails short in meeting the expectations.

The Mater Hospital was established in 1962 with the aim to deliver timely and compassionate medical services to patients and their families to the highest possible standard through the provision of qualified staff, the most appropriate equipment and staff training programmes. The hospital also seeks to contain its cost of operation such that the cost of medical care charged to patients remain as low and affordable as possible to as many patients as possible and such that the viability of the hospital, employment and investment are maintained in line with the ethos of the Sisters of Mercy Kenya (Mater Hospital, 2014).

The Hospital is committed to be a leading healthcare provider in East and Central Africa and benchmark itself against the highest attainable world standards seeking continuous improvement. Mater hospital also has quality Objectives that aim to continually improve the satisfaction of patients with regard to effectiveness of service in meeting the needs of the patients, timeliness in offering services through the analysis of data obtained through patient evaluation, process performance and service nonconformance (Mater Hospital, 2014). However, in most cases these objectives have not been met by the hospital. Hence, it was on this basis that the study aimed to investigate.
1.2 Statement of the Problem

A total of 127 institutions in Kenya had been ISO 9001:2008 certified as at September, 2012. This represents an increase of 48 newly certified firms after September 2009. As at September 2012, a total of 41 service organizations had been ISO 9001:2008 certified. This represents an increase of 19 newly certified service organizations after September 2009. In the health sector, only five private and public hospitals have been ISO 9001:2008 certified as at September 2012, two of which are from the public health sector, these are Moi Teaching and Referral Hospital and Kenyatta National Hospital (Kimutai, Gachunga, Wanjau and Gichuhi, 2014).

According to Chankova Kombe, Muchiri, Decker, Kimani and Pielemeier (2006), the Kenyan public sector owns 60% of all health care facilities in the country. The current public health care delivery system consists of three levels of care: primary, secondary, and tertiary. The tertiary level comprises national referral and teaching hospitals, of which are the two ISO 9001:2008 certified hospitals in the entire country. Although ISO 9001 has been implemented in many organizations for years, most research in the literature has focused on the applicability and effectiveness of ISO 9001:1994/2000 in private-sector settings (Park, Kim, Kang and Jung, 2007).

Mater Hospital became ISO 9001:2008 certified in 2002. The requirements on the ISO 9001 series are built on the quality management principles which include; customer focus, leadership, involvement of people, process approach, system approach to management, continual improvement, factual approach to decision making and mutually beneficial supplier relationship (Mangula, 2013). The motivation for organisations to adopt ISO standards is to improve service delivery and customer experience. There is need to determine the strategic influence of ISO certification in improving efficiency, service quality and customer satisfaction in healthcare institutions service delivery.

Aluvi (2009) agrees that there is a dearth of empirical studies on ISO 9001:2008 and service delivery in Kenya, more so in the public health sector which is a significant indicator of national growth. Akacho (2014) study on health care service delivery aimed at investigating the factors contributing to service delivery and was limited to financial facilities, availability of facilities, poor communication and understaffing and their influence on service provision but was limited to staff responses. There is need to
undertake a study in terms of the patient perceptions. In regard to service quality, there is evidence of research in Kenya. For instance, Gachie (2008) investigated an evaluation of service quality focusing on Kenyan commercial banks, Momanyi, (2008) carried out a survey of service quality management initiatives in the public sector focusing on case study of selected ministries in Kenya. There is therefore a need to undertake a study on service quality in healthcare institutions. Gituanja (2006) carried out a research on service quality at the Jomo Kenyatta International Airport (JKIA). The study found that the airport had not met any of the customer expectations. This was because there were negative gaps between customer perceptions and expectations in all eight variables that were under investigation. There is however no evidence of studies on the relationship between ISO certification and efficiency service quality and customer satisfaction.

1.3 General Objective
The main objective of the study was to investigate the influence of ISO certification on efficiency, customer satisfaction and service quality in healthcare institutions the case of Mater Hospital.

1.4 Specific Objectives
The study was guided by the following specific objectives:
1.4.1 To investigate the influence of ISO certification on efficiency at Mater hospital
1.4.2 To investigate the influence of ISO certification on customer satisfaction at Mater hospital
1.4.3 To investigate the influence of ISO certification on service quality at Mater hospital

1.5 Justification of the Study
1.5.1 Health Care Industry
This study is important because the hospitals that are rewarded with ISO certificate need to know effective implementation measures and how to sustain the necessary and appropriate level of quality management. Therefore, the return on the investment of time and labour must be benchmarked for continuous improvement. With high failure rates, health care industry needs to see the links between obstacles and potential successful outcomes as a result of implementing ISO certificate. This study can build on existing knowledge to provide more recent information to assist in implementation and
maintenance of ISO and can show companies how to maximize the benefits derived from ISO certification. Benefits of ISO certification are also explained and illustrated to encourage companies to continue to improve the implementation processes.

1.5.2 Mater Hospital
The findings from the study will help the hospital managers to regard total quality management as an important element to strategy formulation and planning, deciding which customer to serve, which services to offer, and how to provide value to customers and to outperform competitors in the Kenyan health care sector. In addition, the findings from the research will guide the marketing department in various health care institutions in the implementation of quality management strategy in a more focussed approach. The study will also enable the health care sector to retain its customers as well as keep abreast of the problems encountered in its daily operations such as mismanagement and failure to honour customers’ needs and satisfaction. This research is also intended to communicate the salient factors of ISO implementation, its barriers and ways of overcoming the barriers with a view of giving other organizations a foresight in improving their competitive edge in the health sector.

1.5.3 Patients
The study will be of significance to patients of the Mater Hospital as the study will make recommendations to the management on perception of services quality, efficiency and customer satisfaction. These recommendations when adopted will improve service delivery for patients.

1.5.4 Researchers and Academicians
In terms of research institutes and academicians, the study can serve as a source of literature upon which further research can be undertaken.

1.6 Scope of the Study
The scope of the study focused on the Mater Hospital, although there are several private hospital offering similar service in Kenya, the study limited its scope to Mater Hospital. The study limited its scope to the outpatient services at mater Hospital, the study did not include in-patient respondents but only targeted outpatients at Mater Hospital. The population size for the study was 1,150. The study was undertaken from the month of
April 2015 and was completed in July 2015. The study limited its scope to the influence of ISO certification on efficiency, customer satisfaction and service quality. The study will contribute to academia by filling the gap of research in terms of ISO certification and its influence on efficiency, customer satisfaction and service quality in a private hospital.

In collecting the data, the researcher faced a limitation in convincing patients to participate in the survey as some were not feeling well or were in a rush. However, the researcher’s communication skills were put to use in convincing the respondents that their participation in the study would help improve the services at Mater Hospital. The researcher explained to respondents that the findings of the report would be shared with the management of Mater Hospital for recommendations for service delivery. Another limitation was administration of the instrument to patients who were not well and were hesitant to participate in the study. In order to overcome this limitation the researcher provided assistance by reading out the statement and response options for the respondents and marked them appropriately as they responded.

1.7 Definition of Terms

1.7.1 Continuous Improvement
Continuous improvement is the process by which an organization constantly monitors its processes for areas of improvement. It is a never-ending effort to discover and eliminate the root causes of problems (Evans, 2007).

1.7.2 Effective
Effective means to have an intended or expected effect or to accomplish a specific task or responsibility that is expected (Arauz and Suzuki, 2014).

1.7.3 Efficient
Efficient means to enhance productivity, that is, less rework, fewer errors, and optimal use of resources. To improve efficiency, the productivity ratio must be improved (the input to output ratio must be decreased (Abraham et al., 2010).

1.7.4 ISO Certificate
ISO Certificate serves the purpose of governing the quality management systems in operation. The quality guideline was first revised in 1994 (ISO 9000:1994) and according to Schonberger and Knod (2007) the changes included making a quality manual a
requirement rather than an option; intensified and more frequent references to the need to establish and document procedures and greater emphasis that the standards could be used in a wider range of organisations regardless of size or type of operation. There were four standards that assisted with implementation of the standard (Evans, 2007).

1.8 Chapter Summary

Chapter one presented the background of the study, the problem statement, general objective, specific objectives of this research, importance of the study, and the scope of the study as well as the working definitions of specific terms as used in the project. Chapter two of the study presents the theoretical and empirical literature on the influence of ISO certification on efficiency, customer satisfaction and service quality in health institutions.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction
This chapter presents reviewed literature of the study which is presented according to the three research objectives. The chapter also presents a summary of the literature review.

2.2 Influence of ISO Certification on Efficiency at Mater hospital
International standards were introduced into organisations in order to improve the industry wide standards of services and products. This section of the literature review focuses on the ISO and its influence on efficiency, customer satisfaction and service quality.

2.2.1 International Standard Organisation (ISO) Certification
The International Organization for Standardization (ISO) was first published in 1987 and was subsequently revised in 1994, 2000 and 2008. Among the ISO family was ISO 9001 which provides a series of guidelines on how to establish a quality system to manage the processes that affect its product or services. According to this standard the quality system is required to be documented and employees are expected to follow consistently the documented procedures (Mangula, 2013). Kimutai et al. (2014) argue that empirical evidence shows that the motivation for undertaking ISO 9000 certification is often for external reasons such as, marketing advantages, customer expectation and competitive pressures instead of internal reasons such as improving the quality of products and services.

The purpose of the ISO 9001 standard is to assist companies of various sizes in any sector to implement and operate an effective QMS by enhancing the firm’s ability to design, produce, and deliver quality products and services. The standard provides guidelines on procedures, controls and documentation for a QMS to help a company identify mistakes, streamline its operations and maintain a consistent level of quality (Kartha, 2004). This standard requires a company to first document and to implement its systems for quality management and then to verify by means of an audit conducted by an independent accredited third party for compliance of those systems to the requirements of the standards (Kimutai et al., 2014).
2.2.2 Efficiency
The World Health Report 2000 called attention to the importance of efficiency in all functions of a health system and in ultimately achieving the goals of health improvement, responsiveness and fairness in financing (The world health report, 2000). According to Hsu (2010), technical efficiency refers to the extent that resources are being wasted. It measures the degree of producing the maximum amount of outputs from a given amount of inputs or, conversely, using the minimum amount of inputs to produce a given output. In Kenya, health care access, efficiency and quality of service delivery is a big issue and a challenge to many Kenyans (Mwando, Rukwaro and Onguti, 2009).

Examples of inefficiencies are excessive hospital length of stay, over-prescribing, over-staffing, and use of branded over generic drugs, and wastage of stock. It has thus been analogized to a “torn rice sack” as resources are wasted due to inefficiencies in the system. Measurement of efficiency is especially relevant in settings constrained by scarce resources and given the recent economic downturn and escalating healthcare costs. It allows a system to produce more and better at zero cost (Hsu, 2010).

The measurement of efficiency in healthcare is a difficult exercise for various reasons including the complex nature of the productive process and difficulty in measuring the ideal output of the sector, i.e. improved health status. According to Zere, Mbeeli, Shangula, Mandlhate, Mutirua, Tjivambi and Kapenambili (2006) the performance of hospitals may be measured using ratios that mainly measure capacity utilization and frontier techniques founded on micro-economic theory of production. Commonly used ratios include: bed occupancy rate, turnover ratio, turnover interval and average length of stay. Frontier methods of efficiency measurement include linear programming techniques (e.g. data envelopment analysis) and econometric techniques (e.g. production and cost functions). The current study however will employ the factors of micro-economic theory of production.

According to Zere, et al., (2006), technical efficiency of a hospital can be decomposed into scale efficiency and pure technical efficiency. The pure technical efficiency refers to the ability by the management to organize inputs in the process of production while the scale efficiency refers to the managerial ability to choose the optimum size of the hospital. Inappropriate hospital size may cause scale inefficiency. Scale inefficiency can be either due to decreasing returns to scale as a result of a hospital being too large for the
volume of activities it conducts or increasing returns to scale as a result of it being too small for its volume of activities.

In Kenya, several economic development policies and plans like the Kenya Vision 2030, the National Health Sector Strategic Plan (NHSSP) II 2005-2010 and the National Health Accounts 2009/10 place emphasis on improving efficiency in health sector service delivery. Efficiency improvement in hospitals is a key strategy to mobilize more resources domestically for the decentralized health facilities. In addition to lobbying for more domestic and external resources, health managers and policy makers should ensure optimal use of available resources (Sealy and Rosbach, 2010).

2.2.3 Relationship between ISO Certification and Efficiency

In healthcare service delivery, examples of inefficiencies are excessive hospital length of stay, over-prescribing, over-staffing, and use of branded over generic drugs, and wastage of stock. It has thus been analogized to a “torn rice sack” as resources are wasted due to inefficiencies in the system (Kirigia, Emrouznejad and Sambo, 2002). In organisations where there is a scarcity of resources require measurement of their efficiency as compared to organisations that do not face this scarcity. There are two main measures that are used to evaluate efficiency; these are technical efficiency and allocative efficiency. By measuring its efficiency an organization’s system is able to produce better and more at zero costs (Hsu, 2010). Technical efficiency refers to the extent to which an organisation can achieve maximum outputs with the least costs. Allocative efficiency refers to the combination of different resource inputs to produce a mix of different outputs (Kirigia et al., 2001).

The efficiency of the hospital sector merits analysis as it represents the largest proportion of total health expenditure in OECD countries and approximately 45-69 % of government health expenditure in sub-Saharan Africa (Zere et al., 2006). Frontier efficiency measurements of public and private provision in hospitals and similar healthcare settings are summarized below.

The claim that the private sector is usually more efficient, accountable or medically effective than the public sector, is not supported by systematic review of a number of studies evaluating the efficiency of public versus private provision (Theodoropoulos, 2010). In a meta-analysis of 317 published works on efficiency measures, Hollingsworth
(2008) concludes that public provision may be potentially more efficient than private. In the literature, it is clear that the impact of ownership on efficiency is mixed. Lee, Yang and Choi (2009) determined that non-profit hospitals in the United States were more efficient than private commercial hospitals, and past studies validate this conclusion.

Coyne, Richards, Short, Shultz, and Singh (2009) measured efficiency and cost indicators in relationship to hospital size and ownership. Their research shows that small and large not-for-profit hospitals appear to achieve higher efficiency levels than government-owned hospitals, but that larger hospitals of both ownership types report greater efficiency than achieved by small hospitals. In Taiwan, Chang, Cheng and Das (2004) study revealed that the private sector was more efficient than the public sector. In Switzerland, Farsi and Filippini (2006) found that type of ownership had no influence on the efficiency level of healthcare centers. In Germany, studies (Herr, 2008; Helmig and Lapsley, 2001) have found that private hospitals were less efficient as compared to public hospitals. However, Staat (2006) found that private hospitals were more efficient than public owned health centers.

Huerta, Ford, Peterson, and Brigham (2008) found that for-profit institutions had a significant and negative impact on efficiency, supporting the contention that publicly run and nonprofit hospitals may be more efficient than privately run hospitals. Harrison and Sexton (2006) documented that religious, not-for-profit hospitals are becoming more efficient in management of resources and highlighted the importance of the hospital’s unique mission to the community in order to ensure continuing support. Friesner, Roseman and McPherson (2008) examined whether or not hospital efficiency is affected by seasonal inefficiency. Results indicate that hospital efficiency does vary over time, but that the type of inefficiency depends on the specific efficiency being measured. The impact of mergers on technical efficiency has also been studied (Groff, Lien, and Su, 2007).

Variation in efficiency levels not only occurs across high-income countries but also within a country as state and market reforms evolve. During the 1991-96 period, the efficiency of German private hospitals decreased by 20 %. This drop may be attributed to large private investments in supplies and property and to the transfer of inefficient public
clinics to private enterprises – both likely in response to the 1992-3 reform which changed the payment system from per diem to prospective payments.

Evidence emerging from various studies indicates the wide prevalence of technical inefficiency of hospitals as well as other health facilities in Africa (Zere, McIntyre and Addison, 2001; Kirigia, Sambo and Scheel, 2001). With high levels of technical inefficiency, a significant proportion of the available resources are wasted. This further compounds the existing shortage of resources experienced by many countries in the region. In the literature, there is paucity on the number of studies measuring the relative technical efficiencies between public and private in low-and middle-income countries. In Zambia, Masiye (2007) found that private hospitals had a significant and positive influence on their efficiency as compared to those of public hospitals with a mean efficiency of 63 % for public hospitals and 73 % for private hospitals.

Studies in African countries reported technical efficiency levels ranging from 26 % to 87 % with the majority with scores above 50 % (Azakili Adjuik, Chatio, Kanyomse, Hodgson, Aikins and Gyapong, 2006). These results point to a high level of wastage, where the outputs could be doubled with the same amount of resources used and equally, inputs could be reduced by half while producing the same level of outputs. These levels of savings could assist in provision of wide health services, improve quality of healthcare and address inequities in service delivery. In Namibia, savings equated to the construction of 50 clinics and, in South Africa, represented three times user fees collected (Zere et al., 2006).

Similar results were reported in Botswana like those for South Africa, Namibia and Ghana. The study by Tlotlego, Nonvignon, Sambo, Asbu & Kirigia (2010) based on 21 non-teaching hospitals showed that hospitals had significant inefficiencies and failed to make best use of health inputs and existing technology. DEA analysis was used with number of clinical staff and number of hospital beds used as inputs and number of outpatient visits and number of inpatient days used as outputs. The technical efficiency scores were 70.4%, 74.2% and 76.3% for the years 2006, 2007 and 2008 respectively. On average Malmquist total factor productivity decreased by 1.5%. Whilst hospital efficiency increased by 3.1%, technical change (innovation) regressed by 4.5%. Efficiency change
was due to a pure efficiency improvement of 4.2% and a reduction in scale efficiency by 1%.

Azakili et al. (2006) found that the primary source of inefficiency was technical (under-utilization of resources in the delivery of health services). Azakili analysis of 113 public health centers found that 78% of these were technically inefficient. This finding compares favourably with other studies especially in Sub-Saharan Africa. In South Africa, Kirigia et al. (2001) study of 155 health clinics in Kwa Zulu-Natal found that 70% were technically inefficient. A similar study of 32 public health centres in Kenya revealed that 56% of them were technically inefficient (Kirigia et al., 2006). This lower figure in the technical efficiency in Kenya could be due to the small sample.

In India, Jat and Sebastian (2013) reveal a scarcity of resources for healthcare is a well-acknowledged problem. The public sector of healthcare in India is facing the constraints of financial resources as well as a shortage of health professionals at all levels. In this context, the efficient utilization of existing financial and human resources becomes crucial for strengthening the healthcare delivery in the country. The results revealed that 50% district hospitals operating with technical inefficiency is similar to a study conducted in Gujarat state of India (Bhat, Verma and Reuben, 2001) whereas, a study conducted in Tamil state found that 72% of the district hospitals were operating as technically inefficient during the year 2004–2005 (Dash, Vaishnavi and Muraleedharan, 2007).

In Ghana, Azakili et al. (2006) found that health centres were using more inputs than needed at current operational level and should aim at minimizing cost. The operations and performance of health centres could be strengthened if resources are better utilized, the savings (either in terms of deficit reduction or the less probable actual cost reduction) generated from improved efficiency could be channeled to other areas of need within the health care system. The geographic inequity in health care services is also revealed in this study such that the middle belt of Ghana has a higher percentage of inefficient health centres than the two other belts (northern and coastal).

Korir (2010) using stochastic frontier analysis estimated an average inefficiency level of 30% in the public health sector. The inefficiency emanated from inadequate professional staff, poor input combinations, malfunctioning operating theatres, poor distribution of
drugs and poor servicing of machines and equipment. The study indicated that public hospitals operated at higher than their minimum average costs. This study used recurrent expenditure as the dependent variable while average wage, admissions, outpatients, number of surgical operations and number of beds were used as explanatory variables.

Patient-reported measures of health care quality aim to include the patient’s perspective across a range of quality concerns in the assessment process. Well-developed measures, particularly those that have involved patients in development and embrace the complex and multi-dimensional nature of health care, provide an important resource for assessing and communicating the quality of health care (Campbell, Roland and Buetow, 2000). Suki, Lian and Suki (2011) indicated that patients’ expectations exceed perceptions of private health care setting in Malaysia, as they felt that a waiting time of more than an hour to receive the service was excessive and that the health care provider did not respond fast enough when there were problems.

Norazah, Jennifer and Norbayah (2011) studied patients’ perceptions and expectations in a private health care setting in the Klang Valley Region of Malaysia. The results revealed that the customers’ perceptions did not exceed their expectations, as they were dissatisfied with the waiting time of more than an hour to receive the service and the healthcare provider did not respond fast enough when there was a problem. Irfan and Ijaz (2011) found that private hospitals in Pakistan were delivering better service quality as compared to public hospitals; and that doctors, nurses, and support staff provided care to the patients, which involved providing a clean and healthy environment, available medical tests and pharmacy facilities within the hospital, sterilized equipment, and efficiently attending to patient calls.

According to Hsu (2010) the literature on relative efficiency levels between private and public delivery of healthcare shows inconclusive evidence. This underscores that one cannot generalize which ownership model is best across countries or even within countries over time. Countries can, however, move towards its best practice by reducing waste and producing cost-effective interventions. The evidence-base needs to be expanded with routine measurement of inputs and outputs of systems to identify and quantify inefficiency, key causes and constraints, and possible interventions or structural changes to improve performance.
2.3 Influence of ISO Certification on Customer Satisfaction at Mater hospital

2.3.1 Customer Satisfaction
Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation. It defined "the number of customers or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals. In a survey of nearly 200 senior marketing managers, 71 % responded that they found a customer satisfaction metric very useful in managing and monitoring their businesses (Farris, Bendle, Pfeifer and Reibstein, 2010). It is seen as a key performance indicator within business and is often part of a balanced scorecard. In a competitive marketplace, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy (Gitman and McDaniel, 2005). Chien, Chang and Su (2002) stated that many companies fail to implement customer satisfaction owing to lack of experience, or not being able to keep up with the continuous implementation of customer satisfaction (requirement of the ISO 9001:2000).

Quality of health services is gaining momentum in the health care literature. Increasingly, health care stakeholders such as governments, health authorities and consumers are attaching importance to health care quality (Smith, Humphrey and Jones, 2006). More and more, patients’ satisfaction is recognized as essential component in the evaluation of health care quality. The quality of health care is not confined to clinical effectiveness or economic efficiency but also incorporate social acceptability as an important quality objective (Nketiah-Amponsah and Hiemenz, 2009).

2.3.3 Relationship between ISO Certification and Customer Satisfaction
Boonshoof and Gray cited in Gopal and Bedi (2014) study on the relationships between service quality, customer satisfaction and buying intentions in the private hospital industry. The objective of the study was to find out if superior service quality and superior transaction specific customer satisfaction will enhance loyalty among patients in the private health care industry. Study attempts to assess what dimensions of both customer satisfaction and service quality drive ‘Overall Satisfaction and Loyalty’ in the South African private hospital industry. The results reveal that the service quality
dimensions, empathy of nursing staff and assurance impact positively on both loyalty and cumulative satisfaction.

Nketiah-Amponsah and Hiemenz (2009) study found that the relatively low level of consumer satisfaction of public health care vis-à-vis private health care might be attributable to the general job dissatisfaction and lack of motivation among public sector health care providers. Agyepong, Anafi, Asiamah, Ansah, Ashon and Narh-Dometey (2004) highlighted the workplace obstacles that caused dissatisfaction and de-motivated staff in Ghana’s public health sector. Among the obstacles the authors mentioned in order of importance were low remuneration; lack of essential equipment, tools and supply to work with; delayed promotion; difficulties and inconveniences with transportation to work; staff shortages and housing among others.

Agyepong et al. (2004) concluded that given the workplace obstacles that de-motivate staff and negatively influence their performance, the public sector can hardly provide high quality care. Abdul Aziz, Nishazini and Noorashikin (2013) study on the impact of quality standards and a special customer service program on Customer Satisfaction Index (CSI) concluded that the implementation of quality standards of ISO 9001, MSQH (Malaysia standards) and JCI (American standards) had improved the customer satisfaction index for KPJ Seremban at the rate which is at par with other international studies.

In a study on the factors affecting provision of service quality in the public health sector in Kenyatta National Hospital, Wanjau, Muiruri and Ayodo (2012) adopted the Service Quality Model of Glied (2000). According to Glied’s model, the expectations of customer depends on the five factors of word of mouth, customer needs, image, customer learning and market communication. The experience of the patient depends on the functional quality (process/how) and the technical quality (outcome/what) which is filtered through the image (who). Both experiences and expectations can often lead to a perception gap. According to Coulthard (2004) a perception gap can appear between the perceived service and the expected service.

According to Argote (2000), administrators, highly skilled physicians, ancillary staff are important to produce effective quality improvement and high-quality outcomes for hospital growth. This means that there is need for hiring of highly qualified staff. In order
to recruit and be able to retain highly successful staff it is important that the staff be empowered by their involvement in the hospital affairs as partners and should also be given opportunities for advancement (Brown and Duguid, 2003). The service quality of a hospital more often fails due to the total sum of apparent inconsequential events that may arise from lack of capacity of employees and also in the service delivery itself which requires high levels of specific skills and experience which must be continuously learned (Cohen and Levinthal, 2001).

Service quality delivery in hospital environment relies more on the technology used to harness information (Allen, 2001). Dutton and Starbuck (2002) agree that there is need to make huge investments towards technology that can facilitate improvement process and service assessment. In order for a hospital to succeed in having appropriate technology for information processing, the hospital must show commitment to four main areas (Cibulskis and Hiawalyer, 2002). These are analyzing data, and facilitate the quality insurance process; invest in information technology; investments in information technology and in quality assurance sections with a qualified staff that abstract records.

According to Government of Kenya (2001) report, to have a successful information technology system in hospitals requires four main commitments from the strategic leadership of the hospital. These are; nurturing and encouraging buy-in so new systems will be utilized and their benefits will be realized and devising information technology systems that provide real-time feedback to providers as they are caring for patients a willingness to invest in Information Technology and working with physicians and others to customize an information system to meet specific needs and culture of the institution; (GoK, 2001).

The financial dimension of service organisations has often been a constraint to other operations and functions that influence service delivery (Wanjau et al., 2012). In most private hospitals, there is a high incidence of falsification of financial statements that. The top leadership of these hospitals at times may exaggerate revenue and also misstate expenses in an effort to meet the expectations of the industry and their shareholders.

In Kenya, public hospitals often require funding to redesign, rehabilitate, equip and staff them in an effort to provide efficient and effective service delivery to Kenyans (GoK, 2001). In this case, there is need to distinguish between bad costs that increase
bureaucracy and hence becomes an obstacle to service delivery and good costs that improve the organisational capacities (Sun and Shibo, 2005). According to Irungu (2010), the provision of health services in Kenya remains generally suboptimal because majority of the health facilities have staffing imbalances of qualified personnel resulting from weak deployment procedures. Additionally, insufficient skilled human resources (medical officers, dentists, nurses, midwives and other specialists) are also a major constraint to improving service delivery. For example, the doctor-patient ratio is about 17:100,000 against the recommended 1:600 by the World Health Organization (WHO) while the nurse-patient ratio is 121:100,000 against the recommended 200:100,000 by World Health Organisation (WHO).

According to Wanjau et al. (2012) the most important aspect of service delivery in health institutions is communication. She argues that communication is the first point of interaction with the patient and of service delivery and when a patient is satisfied with the information they get from the hospital staff, they are able to be more comfortable and less likely to have anxiety. Further, Wanjau et al. agree that when the nature of treatment and the medical tests are clearly explained it also avoids the sense of vulnerability of the patient. Irving and Dickson (2004) found that there is evidence that challenges in communication are often due to poor or no patient follow-up, increased use of expensive diagnostic tests, and decreased use of primary care services and increase use of emergency services.

Gopal and Bedi (2014) argue that a few professionals contend that patients/consumers perception of quality service in health care is not accurate because of the inability of patients to analyze and judge the technical competence of medical practitioners with accuracy. It is further observed that our medical courses focus on imparting technical knowledge to the students and hence doctors do not receive any soft skill training which will enable them to get closer to their patients. In Ghana, Turkson (2009) used the proportion of respondents who were given instructions or advice about their illness as part of the consultation also as an indicator of effective communication. Turkson found this to be low (46 %). Communication between health workers and patients is a key component of patient satisfaction. Good communication and caring relationship are important in achieving patient satisfaction.
In rural Bangladesh, Aldana, Piechulek and Al-Sabir (2001) found that the second most powerful predictor for patient satisfaction with service delivery was the respect for privacy. Brahmbahtt, Baser and Joshi (2011) found that customers’ perceptions did not exceed their expectations, as the patients were dissatisfied with the level of health care services rendered by 5 private hospitals from Ahmadabad and Gandhi agar cities of Gujarat state. Haque, Sarwar, Yasmin and Nuruzzaman, (2012) found in their study that customer satisfaction had direct and indirect relationships to personnel support, and to attention given to patients and hospital facilities at a private hospital in Malaysia.

Zaim, Bayyurt and Zaim (2010) studied the important criteria for measuring service quality for hospitals in Turkey. They confirmed that tangibility, reliability, courtesy and empathy are significant for customer satisfaction, while responsiveness and assurance were not. Similarly, Turkson (2009) study found that there was a high level of privacy in the consulting rooms. However, initial screening of patients at the Out Patients’ Department (OPD) was done in the open. Providing cubicles or screens will assure patients of confidentiality. Patients are more likely to give important medical history information to healthcare providers if there is respect for confidentiality.

2.4 Influence of ISO Certification on Service Quality at Mater hospital

2.4.1 Service Quality

In order to achieve and maintains success in the business world, organizations today have to include quality into their strategic advantage as it has become a significant decisive factor for customer deciding on an organizations product or service (Irfan and Ijaz, 2011). Services are immaterial and therefore difficult to measure and rely more on the customers’ expectations and perceptions. The perceptions and expectations of patients are considered to be the major indicator to assess the service quality of healthcare organization (Irfan and Ijaz, 2011) and quality of service delivered to the patients should meet or exceed their perceptions and expectations (Parasuraman, Zeithaml and Berry, 1985, 1988; Zeithaml, Berry and Parasuraman, 1993).

According to Lohr (1991, p. 75) quality is “the degree to which healthcare services for individuals and population increases the likelihood of desired healthcare outcomes and is consistent with the current professional knowledge”. Mosadeghrad (2013) defined quality
healthcare as “consistently delighting the patient by providing efficacious, effective and efficient healthcare services according to the latest clinical guidelines and standards, which meet the patients’ needs and satisfies providers”. Perceived service quality is important concept on quality management area. Numerous researchers have investigated the relationship between perceived service quality and customer satisfaction and they concluded that perceived service quality affected customer satisfaction (Clemes, 2008; Ismail, 2009). Furthermore, at services context, perceived service quality has more influence to customer satisfaction compared to perceived price (Ismail, 2009).

Healthcare service quality is even more difficult to define and measure than in other sectors. Distinct healthcare industry characteristics such as intangibility, heterogeneity and simultaneity make it difficult to define and measure quality. Healthcare service is an intangible product and cannot physically be touched, felt, viewed, counted, or measured like manufactured goods. Producing tangible goods allows quantitative measures of quality, since they can be sampled and tested for quality throughout the production process and in later use. However, healthcare service quality depends on service process and customer and service provider interactions (McLaughlin and Kaluzny, 2006; Mosadeghrad, 2012).

The provision of service quality is of great importance to the management of all service organizations and hospitals should particularly be interested to providing excellent clinical care, also focus on providing quality service to their patients (Biermann, 2006). Furthermore, several studies (historic and recent) have indicated that a high level of service quality is related to an increase in profits, cost savings, and market share (Rundle-Thiele and Russell-Bennett, 2010; Fullerton and McCullough, 2014). These studies show that it has, and remains, vitally important in the current competitive market that providers deliver patient satisfaction, quality service and effective medical treatment through the better understanding of service quality as defined by the customer and how to deliver this type of service (Bisschoff and Clapton, 2014).

According to Bisschoff and Clapton (2014) it is of the utmost importance to understand the experience provided to the patient in order to increase the market share of the institution in the current economic climate. It has become more important than ever for companies to deliver a patient experience that differentiates it from competitors as the
services can easily be copied, matched and duplicated. In order to create a memorable experience for patients, employees need to react to patients based on their unique needs and engage them (Reichheld, 2008).

The patients’ expectation of the quality in hospital service delivery is continuously growing at a fast rate. A significant factor that influences patients’ choice of a hospital is their service quality. Quality in healthcare services comprises of the characteristics and features of a service or product and the extent to which it satisfies the implied or stated needs. Service quality in healthcare is giving patients’ what they need (professionalism) and what they want (patient quality), without error, within high levels of regulation, using the fewest resources and without waste and delays (Kumaraswamy, 2012).

2.4.2 Relationship between ISO Certification and Service Quality
Walters (2001) judged the quality of service in health care organization by reliability, availability, credibility, security, competence of staffs, understanding of customer needs, responsiveness to customers, courtesy of staffs, comfort of surroundings, communication between participants and associated goods provided with the service. Griffith and Alexander (2002) in the UAE contrasted the service quality offered by public and private healthcare institutions.

Kumaraswamy (2012) study on service quality in health care centers’ concluded that the important service quality factors in health care center are physician behavior, supportive staffs, atmospherics and operational performance which support the previous findings of (Chahal and Sharma, 2004). Service quality factors are often rated highly in corporate health care centers in contrast to non-corporate health care centers. The highly rated service quality factors in corporate health care centers were the behaviour of physicians and the operational performance. Similarly, the service quality factors of operational performance and physician behaviour were found to be important determinants of service quality in both corporate and non-corporate health care centers (Chahal and Sharma, 2004).

Quality service in the hospital setting can be provided by several departments including nursing, customer support, food and beverages, laboratory services, pharmaceutical services, information technology, doctors and hospital management. These departments are equally important in providing quality service to the patient, consequently ensuring
patient satisfaction (Pui-Mun, 2004). Patients rely on their attitudes regarding facilities and health professionals to assess their experience Health professionals focus on providing their patients with the best possible treatment (Yeúilada & Direktör, 2010).

In the literature, there are several studies that have been conducted in both public and private hospital sectors in different countries. In a study on public and private hospitals in the urban areas of Bangladesh, Andaleeb (2000) found that there was a difference in the services provided with private hospitals having better services than public hospitals in terms of discipline, assurance (medical procedures), responsiveness and community. However, the study also established that both type of hospitals received poor ratings in terms of the skills of the staff, rooms and professionalism.

Arasli, Ekiz and Katircioglu (2008) studied service quality in public and private hospitals in Northern Cyprus finding that the private hospitals were perceived better service than the public hospitals concerning the physical quality of equipment and facilities), quality of the service provide by doctors and nurses, and facility-related activities, i.e., building infrastructure and new equipment. Irfan and Ijaz (2011) study in Pakistan, which concluded that there was better service quality being delivered in private hospitals than in the public hospitals. Ifran and Ijaz found that this was more in terms of the responsiveness and empathy dimensions of ISO certification.

Polsa, Spens, Soneye and Antai (2011) examined the perceived quality of private and public hospital services in Nigeria. The study results showed that service in private hospitals was considered to be superior to those of public hospitals, including having up-to-date environment, appearance of hospital employees, accurate storage of records, and exact delivery of services, employees providing trust, politeness of employees, specialized knowledge and personal attention of hospital. Taner and Antony (2006) studied the differences in service quality between public and private hospitals in Turkey, finding that patients in the private hospitals were more satisfied regarding the assurance dimension, including doctors, nurses and supportive services than their counterparts in the public hospital.

Parasuraman, Zeithaml and Berry (1985, 1988) proposed the SERVQUAL model. The SERVQUAL is a quality management framework developed to measure quality in the service sector. It has often been used to assess the expectations and perceptions of the
service provider’s performance from the customer (Zarei, Arab, Froushani, Rashidian and Tabatabaei, 2012; Ladhari, 2009; Pakdil and Aydin, 2007). The SERVQUAL scale consists of five dimensions of service quality: responsiveness, empathy, reliability, tangibles and assurance (Parasuraman et al., 1985).

The SERVQUAL model has been found to be appropriate for measuring the service quality in the healthcare setting. The healthcare setting can be measured using the dimensions of reliability—the extent to which the service delivery is trustworthy; empathy—the extent to which personnel of the hospital can meet the needs of the patients; tangibles—the physical setting/environment of the hospital, understanding of the diagnoses and the communication between hospital personnel; responsiveness—the level of service delivery, allocation of time and willingness to help and assurance—relevant specialized knowledge, politeness and safeness of diagnoses (Polsa et al., 2011).


The SERVQUAL model by Parasuraman, Zeithaml and Berry (1988) provides an instrument for measuring service quality. One of the five dimensions of service quality that are applicable in general to a service-providing organization like a hospital institution is tangibility which includes physical facilities, equipment and appearance of personnel in the institution to serve customers. This means that availability of health workforce (appearance of personnel) at service delivery points measures service quality (performance) of the health workforce. A study by Singh, Feng, and Smith (2006) found that the benefits such as increased quality of customer service, improved documentation and fewer mistakes and defects were of higher value for service companies. This means health worker availability to at respective work stations plays a key role in ensuring the stated ends are achieved in health care institutions as an example of service organizations (Kimutai et al., 2104).

According to Parasuraman et al. (1988) is responsiveness which is the willingness to help customers and provide prompt service. This means that responsiveness of health
workforce (willingness to help customers and provide prompt service) at service delivery points measure service quality (performance) of the health workforce hence the majority of employees agreeing that health workforce responsiveness leads to better health workforce performance.

A study by Butt and Run (2010) on private healthcare quality: applying a SERVQUAL model used a seven-point Likert-scale from 1 (strongly disagree) to 7 (strongly agree) to measure service quality and responsiveness as one of the measures scored 5.6 (80%). Ahmed and Samreen (2011) studied the private hospital of Karachi in Pakistan and found that the factors reliability and responsiveness, feedback and guidance, and affordability greatly influence patients’ satisfaction. They recommend focusing on the waiting time of the patients and making sure of the availability of the doctors at the appointed time. Kimutai et al. (2014) found that 74.7% of the respondents were of the opinion that health workforce responsiveness leads to better health workforce performance.

Reliability which is the ability to perform the promised service reliably and accurately. This means that competence of health workforce (ability to perform the promised service reliably and accurately) at service delivery points measures service quality (performance) of the health workforce (Parasuraman et al., 1988). Magd (2008) found that the vital benefits derived from implementing the standard were the improved documentation and efficiency of the quality system. Gotzamani, Tsiotras, Nicolaou, Nicolaides and Hadjiadamou (2007) found that the greatest improvements from ISO 9001 certification were establishment of a formal process management system, systematic recording of process performance data, and systematic monitoring of internal indicators related to customer satisfaction and demand for quality proofs from partners.

The tangibles dimension of service quality refers to the appearance of equipment, personnel, physical facilities and communication materials (Parasuraman et al., 1988). In a study on healthcare service quality in Saudi Arabia and Jordan, AI-Hawary (2012) study found that accessibility and tangibles were better provided for in Saudi Arabia hospitals. However, in Jordan, tangibles were found to have a better rating score than accessibility. In Iran, Zarei et al. (2012) conducted a study on service quality which found that there were high expectations that were related to the tangibles dimension and the least expectations was from perception of the dimension of empathy. However, in
contradictory findings, Butt and Rum (2010) findings in regard to the lowest to highest perceptions and expectations was observed in the tangibles dimension in regard to the physical delivery of care within private hospitals in Malaysia.

Empathy is defined as the caring, individualized attention a firm provides its customers. The essence of empathy conveys the message that customers are unique and special (Ziethaml and Bitner, 2003). Hui and Tse (2006) found only longer waits influenced perceived wait time while short waits had no effect on variables such as waiting time, affective responses to the wait, and acceptability of the wait. Katz, Larson and Larson (2001) studied queue waits in a health care and found that providing wait time information reduced perceived waiting time but did not affect stress levels and satisfaction of customers. In Ghana, Mensah, Yamoah and Adom (2014) found that empathy emerged the best predictor of service quality in Ghanaian hospitals followed by tangibility, reliability and affordability. Although assurance and responsiveness ranked fifth and sixth respectively, they were of little statistical significance.

2.5 Chapter Summary

This chapter presented reviewed literature on the influence of ISO certification on efficiency, customer satisfaction, and service quality within the health sector. The next chapter of the study focuses on the methodology the researcher adopted to achieve the study objectives. These include the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods and lastly the chapter summary.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
The chapter is organized in the following seven sections: the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods and lastly the chapter summary.

3.2 Research Design
A descriptive research design was adopted for this study. Descriptive research is an approach which includes description and observing the behaviour of a subject without influencing this behaviour. Descriptive design involves measuring of variables through collection of data from a population which is often the unit of analysis in order to generate tabulation of percentages and frequencies which indicate how much, what and when (Shuttleworth, 2006).

Descriptive method tries to measure the types of activities, how often, when, where and by whom. The data was gathered using questionnaires and analyzed using frequency distribution method. A frequency distribution is a list containing the values of a variable and the corresponding frequencies with which each value occurs. A frequency distribution condenses the raw data into a more useful form and allows a quick visual interpretation of the data (Cooper and Schindler, 2006). The design is appropriate for this study as the researcher seeks to establish the influence of the independent variables (service efficiency, customer satisfaction and service quality) on the dependent variable (ISO Certification).

3.3 Population and Sampling Design

3.3.1 Population
Cooper and Schindler (2006) describe a population as the total collection of elements whereby references have to be made. The target population of the study were customers of Mater Hospital Outpatient services. Previous studies (Yousapronpaiboon and Johnson, 2013; Mensah, Yamoah and Adom (2014) used a population of outpatient in their study on quality of service delivery in private hospitals in Thailand. Mater Hospital serves an average of 200-230 outpatients a day. The population for the study is the outpatient
customers of Mater Hospital. In 5 working days the target population for the study was 1,150 outpatients (Mater Hospital Outpatient services Records, 2015).

3.3.2 Sampling Design and Sample Size

3.3.2.1 Sampling Frame
A sampling frame is a list of elements from which the sample is actually drawn and closely related to the population (Cooper and Schindler, 2006). The sampling frame of the study is a list of outpatients that have accessed the Mater Hospital outpatient services between the 15th of June 2015 and 19th June 2015.

3.3.2.2 Sampling Technique
The researcher adopted probability sampling technique. A probability sample frequently is more accurate than a census of the entire population. The smaller sampling operation lends itself to the application of more rigorous controls, thus ensuring better accuracy. The researcher adopted systematic sampling. In systematic sampling, the researcher selects every n\textsuperscript{th} member after randomly selecting the first through n\textsuperscript{th} element as the starting point (Mugenda and Mugenda, 2003). The researcher decided to sample every 5\textsuperscript{th} member of the population until the desired sample size was achieved.

3.3.2.3 Sample Size
In order to calculate the sample size for the study, the following relationship suitable for populations less than 10,000 as suggested by Mugenda and Mugenda (2003) was adopted. The sample size was therefore 295.

\[ n = \frac{n_0}{1 + n_0/N} \]

Where, \( n \) is the desired sample size for small populations.

\( n_0 \) is the desired sample size when population is less than 10,000 which is 384

\( N \) is the population size

By applying the sample size formulae,

\[ n = \frac{384}{1 + 384/1,150} \]
### Table 3.1: Sample Distribution Table

<table>
<thead>
<tr>
<th>Day of week</th>
<th>Population</th>
<th>Sample size</th>
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<tbody>
<tr>
<td>Monday</td>
<td>230</td>
<td>34</td>
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<td>Tuesday</td>
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<td>Friday</td>
<td>230</td>
<td>54</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,150</strong></td>
<td><strong>181</strong></td>
</tr>
</tbody>
</table>

Source: Researcher (2015)

### 3.4 Data Collection Methods

The study used primary data. The primary data collection method was the questionnaires. Maholtra and Birks (2007) explain that questionnaires are an important data collection tool. In addition, the use of questionnaires is justified because they provide an effective and efficient way of gathering information within a very short time. The questionnaire was designed into four sections. The first section contains questions relating to the respondents background information. The second section measures the efficiency variables, section three measured the customer satisfaction variables, and fourth section measured the service quality factors.

In order to measure the service quality, the study adopted the SERVQUAL questionnaire that included 21 items across 5 dimensions: tangibles (5 items), reliability (5 items), responsiveness (3 items), assurance (4 items) and empathy (4 items). In order to measure the efficiency variable the study adopted the measurements adopted by Azakili et al. (2006) to measure the efficiency of healthcare service delivery at Mater Hospital. A 5-point Likert-type scale was used, ranging from strongly disagree (1) to strongly agree (5) to access the level of expectations and perceptions of patient service efficiency, customer satisfaction and service quality. The study adopted Marshall and Hays (2006) patient satisfaction questionnaire short-form to measure customer satisfaction with healthcare services. The researcher adopted the questionnaire as it is appropriate for an academic study. This means that the researcher identified the questionnaire as meeting the requirements to measure the variable for customer satisfaction which has also been found to be reliable.
3.5 Research Procedures
A pilot test involving 5 respondents was carried out to evaluate the completeness, precision, accuracy and clarity of the questionnaires. This allowed the researcher to be able to make modifications to the instrument in order to elicit the expected information from respondents. After the amendment of the final questionnaire, the researcher explained the purpose of the research and sought permission from the administration of Mater Hospital to carry out the research in various branches. The questionnaires were administered to patients during the working hours as they left the hospital. This approach was also adopted by Yegon (2011) in a study on patient factors influencing satisfaction with quality of healthcare in Kenya. The questionnaires were personally administered by the researcher with the help of a research assistant. This method of administration is justified as the nature of the research sought to establish the influence of ISO certification on efficiency, customer satisfaction and service quality and ISO certification on improving efficiency and service quality in private healthcare institutions. The pilot tests revealed that some of the wording of the questionnaire was too technical for the customers and this was modified by changing the language of the instrument to simple and understandable statements.

3.6 Data Analysis Methods
The data analysis process started with the coding of the questionnaire as per the variables under study. The researcher used Cronbach’s alpha to establish the reliability of the study instrument, the results indicated that the alpha values for the variables were between 0.91 and 0.93. According to Arasli, Ekiz and Katircioglu (2008) alpha values of above 0.70 are acceptable in research. The reliability coefficient of the instrument was established at 0.78 which is sufficient for research (Arasli et al., 2008).

Descriptive statistics were adopted to analyse the data and were presented in tables, charts and figures. This generated quantitative reports through tabulations, percentages, and measure of central tendency. Cooper and Schindler (2008) note that the use of percentages is important for two reasons; first they simplify data by reducing all the numbers to range between 0 and 100. Second, they translate the data into standard form with a base of 100 for relative comparisons. The mean score for each attribute will be calculated and the standard deviation used to interpret the respondents deviation from the mean. The researcher also used inferential statistics (correlation and regression). The data
was analyzed using Statistical Package for Social Sciences (SPSS) program and presented using tables, and figures to give a clear picture of the research findings at a glance.

3.7 Chapter Summary

This chapter presented the research techniques adopted by the study to meet the study objective. These included the research design, population and sample, data collection methods, sampling design and sample size, research procedures, data analysis methods and lastly the chapter summary.
CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter of the study presents the results and findings which are presented in line with the study research questions. The data is presented in tables and figures. The researcher was able to collect 181 questionnaires which represents a response rate of 69.8 % which is adequate for research as Mugenda and Mugenda (2003) recommend a response rate of more than 50 % of the sample size.

4.2 Background Information

4.2.1 Gender

Figure 4.1 shows the respondents gender where the majority were female and accounted for 76.0 % as compared to the male respondents who were 24.0 %.

Figure 4.1: Gender of Respondents

4.2.2 Age

In terms of their age, the results indicate that 46.0 % were 42-49 years, 20.0 % were 26-35 years, 17.3 % were between 18-25 years, 10.0 % were above 50 years and 6.7 % were 34-41 years as depicted in Figure 4.2.
4.2.3 Education

In regard to their education level, 40.0 % were postgraduate, 20.0 % were diploma, 13.3 % were degree and 2.7 % were certificate as shown in Figure 4.3.

4.2.4 Income

In reference to their level of income, Figure 4.4 shows that 15.9 % were earning 31,000-40,000 Kenya shillings, 13.3 % were earning above 51,000 Kenya shillings, 10.6 % were earning 41,000-50,000 Kenya shillings and 6.7 % were earning between 23,000-30,000 Kenya shillings, and as illustrated in Figure 4.4.
4.2.5 Occupation

Figure 4.5 depicts the occupation of the respondents, the results show that 43.3% were self-employed, 20.6% were teachers, 15.9% were managers, 10.6% were sales representatives and 4.8% were advocates and lecturers respectively.

4.2.6 Frequency of Hospital Visits

The results show that 32.0% had visited Mater Hospital 11-15 times, 30.7% had visited for 5-10 times, 6.7% had visited for less than five times and 10.6% had visited for more than 15 times and 2 as depicted in Figure 4.6.
4.2.7 Influence of ISO certification effect on Services
The study sought to establish the influence of ISO certification on service provided at mater Hospital. The results indicate that that 49.0 % were yes responses, 34.0 % were no responses and 17.0 % were not sure responses as shown in Figure 4.7.

4.3 Influence of ISO Certification on efficiency at Mater Hospital
4.3.1 Privacy in consulting rooms
In terms of privacy in consulting rooms, majority of respondents agreed that there was an improvement as indicated by 35.2 % were agree, 22.0 % were neutral, 24.0 % were strongly disagree, 17.6 % were disagree and 12.1 % who were strongly agree as seen in Table 4.1.

**Table 4.1: Privacy in Consulting Rooms**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>24</td>
<td>24.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>32</td>
<td>17.6</td>
</tr>
<tr>
<td>Neutral</td>
<td>39</td>
<td>22.0</td>
</tr>
<tr>
<td>Agree</td>
<td>32</td>
<td>35.2</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>64</td>
<td>12.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>181</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.3.2 Waiting Time

The results showed patients weren’t satisfied with the time they waited to get served at the hospital. Table 4.2 shows 38.5 % were disagree, 20.9 % were strongly disagree, 18.7 % were agree, 15.4 % were neutral and 6.5 % were strongly agree as shown in Table 2.

**Table 4.2: Waiting Time**

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>38</td>
<td>20.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>70</td>
<td>38.5</td>
</tr>
<tr>
<td>Neutral</td>
<td>28</td>
<td>15.4</td>
</tr>
<tr>
<td>Agree</td>
<td>34</td>
<td>18.7</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>12</td>
<td>6.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>181</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
4.3.3 Records Retrieval
Table 4.3 shows patients’ perception of influence of ISO certification on record retrieval at Mater Hospital. The results show that 28.6 % were neutral, 25.3 % were agree, 19.8 % were strongly agree, 18.7 % were disagree and 7.7 % were strongly disagree.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>7</td>
<td>7.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>17</td>
<td>18.7</td>
</tr>
<tr>
<td>Neutral</td>
<td>26</td>
<td>28.6</td>
</tr>
<tr>
<td>Agree</td>
<td>23</td>
<td>25.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>18</td>
<td>19.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.3.4 Decision Making Time during Consultations
In regard to the influence of ISO certification on decision making at Mater Hospital, the results in Table 4.4 show that 33.0 % were disagree, 25.3 % were agree, 23.1 % were neutral, 9.9 % were strongly disagree and 8.8 % were strongly agree.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>18</td>
<td>9.9</td>
</tr>
<tr>
<td>Disagree</td>
<td>60</td>
<td>33.0</td>
</tr>
<tr>
<td>Neutral</td>
<td>42</td>
<td>23.1</td>
</tr>
<tr>
<td>Agree</td>
<td>46</td>
<td>25.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>16</td>
<td>8.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>181</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.3.5 Diverse Outpatient Services
Table 4.5 shows the respondents perception of the influence of ISO certification on provision of diverse outpatient services. The findings revealed that disagree, 28.6 % were neutral, 25.3 % were agree and 19.8 % were strongly agree, 18.7 % were disagree and 7.7 % were strongly.
Table 4.5: Diverse Outpatient Services

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>14</td>
<td>7.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>34</td>
<td>18.7</td>
</tr>
<tr>
<td>Neutral</td>
<td>52</td>
<td>28.6</td>
</tr>
<tr>
<td>Agree</td>
<td>46</td>
<td>25.3</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>32</td>
<td>19.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>181</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.3.6 Utilize Resources for Service Delivery

Table 4.6 shows the responses to the utilization of resources at Mater Hospital, the results show that 33.0% were disagree, 23.1% were neutral, 23.1% were strongly disagree, 13.2% were agree and 7.7% were strongly agree.

Table 4.6: Utilize Resources for Service Delivery

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>42</td>
<td>23.1</td>
</tr>
<tr>
<td>Disagree</td>
<td>60</td>
<td>33.0</td>
</tr>
<tr>
<td>Neutral</td>
<td>42</td>
<td>23.1</td>
</tr>
<tr>
<td>Agree</td>
<td>24</td>
<td>13.2</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>14</td>
<td>7.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>181</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.4 Influence of ISO certification on customer satisfaction at Mater Hospital

4.4.1 General Satisfaction

In regard to the general satisfaction of patients with services at the Mater Hospital, the results show that patients were satisfied I am satisfied with some of the medical care I received with a mean score of 3.86 and a standard deviation of 1.807, the results show that 56.9% were agree, 13.8% were strongly agree, 12.3% were neutral and disagree respectively and 4.6% were strongly disagree. In terms of receiving a perfect medical care from personnel with a mean score of 3.63 and standard deviation of 1.024 where
72.3 % were agree, 12.3 % were strongly agree, 7.7 % were neutral, 4.6 % were disagree and 3.1 % were strongly disagree as shown in Table 4.7.

**Table 4.7: General Satisfaction**

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I received a perfect medical care from personnel</td>
<td>4.6 %</td>
<td>12.3 %</td>
<td>12.3 %</td>
<td>56.9 %</td>
<td>13.8 %</td>
<td>3.63</td>
<td>1.024</td>
</tr>
<tr>
<td>I am satisfied with some of the medical care I received</td>
<td>3.1 %</td>
<td>4.6 %</td>
<td>7.7 %</td>
<td>72.3 %</td>
<td>12.3 %</td>
<td>3.86</td>
<td>1.807</td>
</tr>
</tbody>
</table>

**4.4.2 Technical Capacity**

In regard to technical capacity, the respondents indicated that ISO certification had a positive influence on Mater having everything to provide competent medical care for you as indicated by a mean of 3.49 and standard deviation of 1.091, in terms of rating, 56.9 % were agree, 16.9 % were disagree, 10.8 % were strongly agree, 9.2 % were neutral, and 6.2 % were strongly disagree. In regards as to whether doctors check everything and examine patients before treatment 35.4 % were agree, 29.2 % were disagree, 12.3 % were strongly disagree and neutral respectively and 10.8 % were strongly agree (M= 3.18; SD= 1.116). The least ranked technical capacity factors listed was having doubts with some of the doctors that treat patients with a mean score (M=3.03; SD=1.262) where 53.8 % were agree, 23.1 % were disagree, 10.8 % were neutral, 9.2 % were strongly disagree and 3.1 % were strongly agree as shown in Table 4.8.

**Table 4.8: Patients perception of technical capacity at Mater Hospital**

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mater has everything to provide competent medical care for you</td>
<td>6.2 %</td>
<td>16.9 %</td>
<td>9.2 %</td>
<td>56.9 %</td>
<td>10.8 %</td>
<td>3.49</td>
<td>1.091</td>
</tr>
<tr>
<td>I have doubts with some of the doctors who treat you</td>
<td>12.3 %</td>
<td>29.2 %</td>
<td>12.3 %</td>
<td>35.4 %</td>
<td>10.8 %</td>
<td>3.03</td>
<td>1.262</td>
</tr>
<tr>
<td>Doctors check</td>
<td>9.2 %</td>
<td>23.1 %</td>
<td>10.8 %</td>
<td>53.8 %</td>
<td>3.1 %</td>
<td>3.18</td>
<td>1.116</td>
</tr>
</tbody>
</table>
4.4.3 Communication

In terms of communication, the respondents agreed that doctors were keen on what patients tell them as indicated by a mean score of 4.06 and standard deviation of 1.312. The results further show that 40.0% were agree, 24.6% were disagree, 18.5% were strongly agree, 12.3% were strongly disagree and 4.6% were neutral. In terms of doctors explaining the reason for tests, the results show that 58.5% were agree, 29.2% were strongly agree, 7.7% were disagree, 3.1% were neutral and 1.5% strongly disagree with a mean score of 3.27 and a standard deviation of 0.881 as shown in Table 4.9.

<table>
<thead>
<tr>
<th>Table 4.9: Patient’s satisfaction with communication from hospital staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>Doctors were good in explaining the reason for tests</td>
</tr>
<tr>
<td>Doctors were keen on what you tell them</td>
</tr>
</tbody>
</table>

4.4.4 Financial

Table 10 shows respondents perceptions of the influence of ISO certification on the financial aspect of customer satisfaction. The results show that patients felt that they pay for medical care that they can afford as indicated by a mean score of 3.55 and standard deviation of 1.208. In terms of the responses, 56.9% were agree, 16.9% were disagree, 12.3% were neutral, 10.8% were strongly agree and 3.1% were strongly disagree. In terms of patient’s confidence towards the quality of healthcare they get is worth their money, 32.3% were agree, 27.7% were disagree, 15.4% were strongly agree, 12.3% were strongly disagree and neutral respectively and had a mean score of 3.10 and a standard deviation if 1.000.
Table 4.10: patients rating of financial aspect of healthcare service delivery

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am confident I get medical care that is worth my money</td>
<td>12.3 %</td>
<td>27.7 %</td>
<td>12.3 %</td>
<td>32.3 %</td>
<td>15.4 %</td>
<td>3.10</td>
<td>1.000</td>
</tr>
<tr>
<td>I feel I pay for medical care I can afford</td>
<td>3.1 %</td>
<td>16.9 %</td>
<td>12.3 %</td>
<td>56.9 %</td>
<td>10.8 %</td>
<td>3.55</td>
<td>1.208</td>
</tr>
</tbody>
</table>

4.4.5 Time Spent With Doctor

Table 4.11 shows patients’ responses in terms of the time spent with the doctor, as indicated, majority of the respondents indicated that the doctor did not spend enough time with them as indicated by 44.6 % strongly disagree responses, 24.6 % were disagree, 21.5 % were strongly agree, 4.6 % were neutral and agree respectively with a mean of 2.53 and standard deviation of 1.212. The results also show that healthcare providers were not in a rush when treating patients’ as indicated by a mean of 2.61 and standard deviation of 1.220 where 41.5 % were disagree, 21.5 % were agree, 16.9 % were strongly disagree, 12.3 % were neutral and 7.7 % were strongly agree.

Table 4.11: Time Spent With Doctor

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors spent enough time with me</td>
<td>44.6 %</td>
<td>24.6 %</td>
<td>4.6 %</td>
<td>4.6 %</td>
<td>21.5 %</td>
<td>2.53</td>
<td>1.212</td>
</tr>
<tr>
<td>Healthcare providers were in a rush when they treated me</td>
<td>16.9 %</td>
<td>41.5 %</td>
<td>12.3 %</td>
<td>21.5 %</td>
<td>7.7 %</td>
<td>2.61</td>
<td>1.220</td>
</tr>
</tbody>
</table>
4.4.6 Accessibility and Convenience

In terms of accessibility and convenience of getting healthcare service delivery at Mater Hospital. The findings show that the highest mean score was observed for patients had to wait for too long to get medical care (M=4.21; SD = 1.319). the rating shows that 35.4 % were agree, 27.7 % were strongly agree, 16.9 % were disagree, 12.3 % were strongly disagree and 7.7 % were neutral. In terms of finding it easy to get appointment for my medical care, the results show that 63.1 % were agree, 15.4 % were neutral, 9.2 % were strongly agree, 7.7 % were disagree and 4.6 % were strongly disagree (M=3.64; SD = 1.233). Forty five percent of respondents agreed to being given easy access to specialists they needed, 24.6 % were strongly agree, 20.0 % were disagree, 6.2 % were strongly disagree and 4.6 % were neutral (M=3.61; SD = 1.220). the least rated factor of accessibility was the ability to get medical care whenever I want it where 38.5 % were agree responses, 24.6 % were disagree, 18.5 % were strongly agree, 10.8 % were strongly disagree and 7.7 % were neutral (M=3.29; SD = 0.925) as shown in Table 4.12.

### Table 4.12: Accessibility and Convenience

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I was given easy access to specialists I need</td>
<td>6.2 %</td>
<td>20.0 %</td>
<td>4.6 %</td>
<td>44.6 %</td>
<td>24.6 %</td>
<td>3.61</td>
<td>1.220</td>
</tr>
<tr>
<td>I find it easy to get appointment for my medical care</td>
<td>4.6 %</td>
<td>7.7 %</td>
<td>15.4 %</td>
<td>63.1 %</td>
<td>9.2 %</td>
<td>3.64</td>
<td>1.233</td>
</tr>
<tr>
<td>I was able to get medical care whenever I want it</td>
<td>10.8 %</td>
<td>24.6 %</td>
<td>7.7 %</td>
<td>38.5 %</td>
<td>18.5 %</td>
<td>3.29</td>
<td>0.925</td>
</tr>
<tr>
<td>I had to wait for too long to get medical care</td>
<td>12.3 %</td>
<td>16.9 %</td>
<td>7.7 %</td>
<td>35.4 %</td>
<td>27.7 %</td>
<td>4.21</td>
<td>1.319</td>
</tr>
</tbody>
</table>
4.4.7 Interpersonal manner

Table 4.13 shows the interpersonal manner of healthcare professionals at Mater Hospital, the findings show that respondents were neutral to the interpersonal nature of doctors. In regard to whether Doctors were too “business” like when giving medical care, the results show a mean score of 3.60 and standard deviation of 1.101, the rating shows that 36.9 % were agree, 27.7 % were neutral, 21.5 % were strongly agree, 7.7 % were disagree and 6.2 % were strongly disagree. In terms of doctors treating patients in a friendly and courteous manner, the results show that 27.7 % were agree, 26.2 % were neutral, 23.1 % were strongly agree, 18.5 % were disagree and 4.6 % were strongly disagree and had a mean score of 3.46 and standard deviation of 1.173.

Table 4.13: Patients’ rating of interpersonal manner of healthcare staff

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors were too “business” like when giving medical care</td>
<td>6.2 %</td>
<td>7.7 %</td>
<td>27.7 %</td>
<td>36.9 %</td>
<td>21.5 %</td>
<td>3.60</td>
<td>1.101</td>
</tr>
<tr>
<td>Doctors treat me in a friendly and courteous manner</td>
<td>4.6 %</td>
<td>18.5 %</td>
<td>26.2 %</td>
<td>27.7 %</td>
<td>23.1 %</td>
<td>3.46</td>
<td>1.173</td>
</tr>
</tbody>
</table>

4.5 Influence of ISO certification on Service Quality at mater Hospital

4.5.1 Tangibles

In terms of the tangibles rating among the respondents, the study findings show that there was high mean score for we have an appealing hospital environment to you as 38.5 % were disagree, 20.9 % were strongly disagree, 18.7 % were agree, 15.4 % were neutral and 6.6 % were strongly disagree (M=3.31; SD = 1.208), followed by the appearance of hospital personnel as appealing with 35.2 % were agree, 22.0 % were neutral, 17.6 % were disagree, 13.2 % were strongly disagree, 12.1 % were strongly agree (M=3.15; SD = 1.205), this was followed by offering convenient timing of services for you show that 33.0 % were disagree, 25.3 % were agree, 23.1 % were neutral, 9.9 % were strongly
disagree and 8.8 % were strongly agree (M=2.90; SD = 1.155). The respondents also indicated that the hospital did not have adequate equipment to serve patients as indicated by 28.6 % were neutral, 25.3 % were agree, 19.8 % were strongly agree, 18.7 % were disagree and 7.7 % were strongly disagree (M=2.90; SD = 1.155) and the appeal of the hospitals physical facilities were also ranked poorly among the respondents as our hospital has appealing physical facilities was represented as 33.3 % were disagree, 23.1 % were both strongly disagree and neutral, 13.2 % were agree and 7.7 % were strongly agree (M=2.52; SD = 1.205) as depicted in Table 4.14.

Table 4.14: Patient perceptions of Tangibles at Mater Hospital

<table>
<thead>
<tr>
<th>Perception</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>We have Up-to-date equipment to serve you</td>
<td>20.9 %</td>
<td>38.5 %</td>
<td>15.4 %</td>
<td>18.7 %</td>
<td>6.6 %</td>
<td>2.52</td>
<td>1.205</td>
</tr>
<tr>
<td>The appearance of hospital personnel is appealing</td>
<td>13.2 %</td>
<td>17.6 %</td>
<td>22.0 %</td>
<td>35.2 %</td>
<td>12.1 %</td>
<td>3.15</td>
<td>1.238</td>
</tr>
<tr>
<td>We offer convenient timing of services for you</td>
<td>9.9 %</td>
<td>33.0 %</td>
<td>23.1 %</td>
<td>25.3 %</td>
<td>8.8 %</td>
<td>2.90</td>
<td>1.155</td>
</tr>
<tr>
<td>we have an appealing hospital environment to you</td>
<td>7.7 %</td>
<td>18.7 %</td>
<td>28.6 %</td>
<td>25.3 %</td>
<td>19.8 %</td>
<td>3.31</td>
<td>1.208</td>
</tr>
<tr>
<td>our hospital has appealing physical facilities</td>
<td>23.1 %</td>
<td>33.3 %</td>
<td>23.1 %</td>
<td>13.2 %</td>
<td>7.7 %</td>
<td>2.49</td>
<td>1.205</td>
</tr>
</tbody>
</table>
4.5.2 Reliability

Table 4.15 shows rating of factors related to the reliability of services at the Mater hospital. The results show that highest score was observed for we perform our services to you right the first time as 35.2 % were disagree, 34.1 % were neutral, 15.4 % were agree, 13.2 % were disagree and 2.2 % were strongly agree (M=2.58; SD=0.978), solving your problems efficiently was rated as 34.1 % were neutral, 29.7 % were disagree, 15.4 % were strongly disagree, 14.3 % were agree and 6.6 % were strongly disagree (M=2.58; SD=0.978). In terms of offering our services prompt every time you visit, the results show that 31.9 % were disagree, 23.1 % were agree, 20.9 % were neutral, 16.5 % were strongly disagree and 7.7 % were strongly agree (M=2.58; SD=0.978). In regard to providing information about our operating hours 41.8 % were disagree, 22.0 % were strongly disagree, 17.6 % were agree, 9.9 % were neutral and 8.8 % were strongly disagree (M=2.49; SD=1.259). The results show that in terms of offering our services within agreed time 36.3 % were disagree, 29.7 % were neutral, 17.6 % were strongly disagree, 12.1 % were agree and 8.8 % were strongly agree (M=2.49; SD=1.058).

Table 4.15: Patient perceptions of reliability at Mater Hospital

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>We offer our services prompt every</td>
<td>13.2 %</td>
<td>35.2 %</td>
<td>34.1 %</td>
<td>15.4 %</td>
<td>2.2 %</td>
<td>2.58</td>
<td>0.978</td>
</tr>
<tr>
<td>time you visit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We solve your problems efficiently</td>
<td>15.4 %</td>
<td>29.7 %</td>
<td>34.1 %</td>
<td>14.3 %</td>
<td>6.6 %</td>
<td>2.67</td>
<td>1.106</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We perform our services to you right</td>
<td>16.5 %</td>
<td>31.9 %</td>
<td>20.9 %</td>
<td>23.1 %</td>
<td>7.7 %</td>
<td>2.74</td>
<td>1.210</td>
</tr>
<tr>
<td>the first time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We inform you about our operating</td>
<td>22.0 %</td>
<td>41.8 %</td>
<td>9.9 %</td>
<td>17.6 %</td>
<td>8.8 %</td>
<td>2.49</td>
<td>1.259</td>
</tr>
<tr>
<td>hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We offer you our service within</td>
<td>17.6 %</td>
<td>36.3 %</td>
<td>29.7 %</td>
<td>12.1 %</td>
<td>4.4 %</td>
<td>2.49</td>
<td>1.058</td>
</tr>
<tr>
<td>agreed time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.5.3 Responsiveness

In regard to responsiveness of services at the Mater Hospital, the highest ranking score was observed was for personnel are ready to provide service to me as cited among 49.5 % who were strongly agree, 25.3 % were agree, 18.7 % were neutral, 3.3 % were disagree and strongly disagree respectively (M=4.28; SD=0.922), personnel offer fast and efficient service to me showed that 52.7 % were strongly agree, 28.6 % were agree, 15.4 % were neutral, 2.2 % were strongly disagree and 1.1 % were disagree (M=4.17; SD=1.111) and personnel have the willingness to provide service to me was rated as 53.8 % strongly agree, 23.1 % were agree, 14.3 % were neutral, 4.4 % were disagree and strongly disagree respectively (M=4.14; SD=1.049) as shown in Table 4.16.

Table 4.16: Patient perceptions of responsiveness at Mater Hospital

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel have the willingness to provide service to me</td>
<td>3.3 %</td>
<td>3.3 %</td>
<td>18.7 %</td>
<td>25.3 %</td>
<td>49.5 %</td>
<td>4.14</td>
<td>1.049</td>
<td></td>
</tr>
<tr>
<td>Personnel are ready to provide service to me</td>
<td>2.2 %</td>
<td>1.1 %</td>
<td>15.4 %</td>
<td>28.6 %</td>
<td>52.7 %</td>
<td>4.28</td>
<td>0.922</td>
<td></td>
</tr>
<tr>
<td>Personnel offer fast and efficient service to me</td>
<td>4.4 %</td>
<td>4.4 %</td>
<td>14.3 %</td>
<td>23.1 %</td>
<td>53.8 %</td>
<td>4.17</td>
<td>1.111</td>
<td></td>
</tr>
</tbody>
</table>

4.5.4 Assurance

Table 4.17 shows the rating of concepts of the assurance factor of service quality at Mater Hospital. The findings show that the highest observed mean score was personnel have required knowledge for the job (M=4.21; SD= 1.319), where 35.4 % were agree, 31.9 % were disagree, 23.1 % were agree, 20.9 % were neutral and 16.5 % were strongly disagree. In terms of personnel being polite and courteous to patients, 38.5 % were agree, 24.6 % were disagree, 18.5 % were strongly agree, 10.8 % were strongly disagree and 7.7 % were neutral (M=3.29; SD= 0.925). The responses show that 40.0 % were strongly agree, 24.6 % were disagree, 18.5 % were strongly agree, 12.3 % were strongly disagree and 4.6 % were neutral in regards to personnel having a good personality and experience
the least scoring factor was personnel provided a sense of trust to me where 31.9 % were disagree, 23.1 % were agree, 20.9 % were neutral, 16.5 % were strongly disagree and 7.7 % were strongly agree (M=2.74; SD= 1.210).

Table 4.17: Patient perceptions of Assurance at Mater Hospital

<table>
<thead>
<tr>
<th>Perception</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel have good personality and experience</td>
<td>12.3 %</td>
<td>24.6 %</td>
<td>4.6 %</td>
<td>40.0 %</td>
<td>18.5 %</td>
<td>3.27</td>
<td>0.881</td>
</tr>
<tr>
<td>Personnel have required knowledge for the job</td>
<td>12.3 %</td>
<td>16.9 %</td>
<td>7.7 %</td>
<td>35.4 %</td>
<td>27.7 %</td>
<td>4.21</td>
<td>1.319</td>
</tr>
<tr>
<td>Personnel provided a sense of trust to me</td>
<td>16.5 %</td>
<td>31.9 %</td>
<td>20.9 %</td>
<td>23.1 %</td>
<td>7.7 %</td>
<td>2.74</td>
<td>1.210</td>
</tr>
<tr>
<td>Personnel was polite and courteous to me</td>
<td>10.8 %</td>
<td>24.6 %</td>
<td>7.7 %</td>
<td>38.5 %</td>
<td>18.5 %</td>
<td>3.29</td>
<td>0.925</td>
</tr>
</tbody>
</table>

4.5.5 Empathy

In regards to the concept of empathy, the highest ranking mean score was for we understand some of your specific needs where 75.8 % were strongly agree, 14.3 % were agree, 5.5 % were neutral, 3.3 % were strongly disagree and 1.1 % were disagree (M=4.58; SD= 0.908), in terms of giving personal attention 44.0 % were strongly agree, 36.3 % were agree, 15.4 % were neutral, 3.3 % were strongly disagree and 1.1 % were disagree (M=4.51; SD= 0.0887), we take your best interests to heart was rated as 68.1 % were strongly agree, 18.7 % were agree, 9.9 % were neutral, 2.2 % were strongly disagree and 1.1 % were disagree (M=4.49; SD= 0.0887) and the least ranking means score was observed for We follow up your cases individually as shown by the results where 69.2 % were strongly agree, 17.6 % were agree, 9.9 % were neutral, 2.2 % were strongly disagree and 1.1 % were disagree (M=4.16; SD= 0.958) as depicted in Table 4.18.
Table 4.18: Patient perceptions of empathy at Mater Hospital

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>We understand some of your specific needs</td>
<td>3.3 %</td>
<td>1.1 %</td>
<td>5.5 %</td>
<td>14.3 %</td>
<td>75.8 %</td>
<td>4.58</td>
<td>0.908</td>
</tr>
<tr>
<td>We follow up your cases individually</td>
<td>3.3 %</td>
<td>1.1 %</td>
<td>15.4 %</td>
<td>36.3 %</td>
<td>44.0 %</td>
<td>4.16</td>
<td>0.958</td>
</tr>
<tr>
<td>We take your best interests to heart</td>
<td>2.2 %</td>
<td>1.1 %</td>
<td>9.9 %</td>
<td>18.7 %</td>
<td>68.1 %</td>
<td>4.49</td>
<td>0.887</td>
</tr>
<tr>
<td>We gave you a personal attention</td>
<td>2.2 %</td>
<td>1.1 %</td>
<td>9.9 %</td>
<td>17.6 %</td>
<td>69.2 %</td>
<td>4.51</td>
<td>0.887</td>
</tr>
</tbody>
</table>

4.6 Inferential Statistics

Inferential statistics involve measurement or relationships and differences between or among the variables. Inferential statistics include correlation, regression and analysis of variance among others. The study was limited to correlation and regression analysis.

Table 4.19: Correlation Coefficients

<table>
<thead>
<tr>
<th></th>
<th>Efficiency</th>
<th>Customer satisfaction</th>
<th>Service quality</th>
<th>ISO Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficiency</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer satisfaction</td>
<td>.277(*)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service quality</td>
<td>.175</td>
<td>.255(*)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ISO certification</td>
<td>.039</td>
<td>.069</td>
<td>.005</td>
<td>1</td>
</tr>
</tbody>
</table>

The results (Table 4.19) show that among the three independent variables, there was a positive and significant relationship between ISO certification and efficiency with a correlation coefficient of 0.039. Similarly there was a positive and significant relationship between ISO certification and customer satisfaction with a correlation coefficient of 0.069 and a positive and significant relationship between ISO certification and service quality.
Tables 4.20, 4.21 and 4.22 show the results of the regression analysis. The dependent variables were efficiency, customer satisfaction and service quality and the independent variable was ISO certification. From Table 4.20, it can be seen that the R square value for the model showed that 71.9% of the variance in the model can be explained by the independent variable.

Table 4.21: ANOVA

<table>
<thead>
<tr>
<th>Mode</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>65.515</td>
<td>3</td>
<td>10.919</td>
<td>153.638</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>61</td>
<td>.071</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>64</td>
<td>91.171</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a  Predictors: (Constant) ISO Certification
b  Dependent Variable: Efficiency, customer satisfaction, service quality

Table 4.21 (ANOVA) indicated that the model is significant ($p$ value = 0.000). This means that the independent variable influenced changes on the dependent variables.

Table 4.22: Regression Coefficients

<table>
<thead>
<tr>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-.251</td>
<td>3.458</td>
<td>-3.909</td>
</tr>
<tr>
<td>Efficiency</td>
<td>.568</td>
<td>.075</td>
<td>.351</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>.308</td>
<td>.100</td>
<td>.232</td>
</tr>
<tr>
<td>Service Quality</td>
<td>.426</td>
<td>.089</td>
<td>.390</td>
</tr>
</tbody>
</table>

Table 4.22 shows the beta coefficients that present the contributions of each variable to the model. It could be observed that the three dependent variables (efficiency, customer satisfaction, and service quality) have significant contributions to the model.
satisfaction and service quality) had statistically significant relationship with the dependent variable ISO certification. The regression results were thus;

ISO Certification = -0.251 + 0.568 Efficiency + 0.308 Customer Satisfaction + 0.426 Service quality

4.7 Chapter Summary

This chapter presented the results of the study which were summarized in tables and figures and also by the researcher’s own interpretation. The next chapter of the study presents the discussion, conclusions and recommendations of the study.
CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter presents the discussion, conclusion and recommendations of the study which are presented according to the research questions of the study.

5.2 Summary
The purpose of the study was to investigate the influence of ISO certification on efficiency, customer satisfaction and service quality in private healthcare institutions using the case of Mater Hospital. The study was guided by the following specific objectives: to investigate the influence of ISO certification on efficiency at Mater hospital; to investigate the influence of ISO certification on customer satisfaction at Mater hospital and to investigate the influence of ISO certification on service quality at Mater hospital.

This study adopted the descriptive research design. A descriptive research design is a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way. The target population of the study was customers of Mater Hospital outpatient services. The researcher targeted outpatient customers for duration of one week whose average number per day is 230 and for five working days are 1,150. The target population for the study was therefore 1,150. The study adopted systematic sampling technique which involved selection of every 5th member of the target population until it achieves the sample size of 295 respondents. The researcher was able to administer 181 questionnaires through convenience sampling which represented a response rate of 69.8%. The study adopted descriptive statistics to analyze the data, these included frequencies, percentages, means and standard deviation of the responses. The study also adopted inferential statistics to explain the relationship between the independent and dependent variables. The inferential statistics adopted were correlation analysis and regression analysis. The data was presented in tables, charts and figures and complemented by the researcher own interpretation.

The study findings showed that the most ranked dimension of efficiency at Mater Hospital was the utilization of resources in providing service delivery. These findings
suggest that there were efforts to use material, financial and human resources to improve service delivery to customers after ISO certification of Mater Hospital.

In terms of the influence of ISO certification on customer satisfaction at Mater Hospital. The study findings showed that there was somewhat general satisfaction with the institutions service delivery. Further, when we come to the dimensions of customer satisfaction, the patients indicated that the time spent with the doctor was poor. This findings suggest that the physicians at Mater Hospital although providing adequate service delivery are fast during consultation with patients.

In regard to the influence of ISO certification on service quality at Mater Hospital. The study findings showed that among the five dimensions measured, empathy and responsiveness were the highly ranked dimensions. This means that the personnel and staff at Mater Hospital are caring and take a personal interest in their patients (empathy) and were also fast in receiving patients at the reception (responsiveness) and enquire whether they were served.

5.3 Discussion

5.3.1 To Investigate the influence of ISO certification on efficiency at Mater hospital

In an effort to investigate the influence of ISO certification on efficiency, the study identified several factors that would measure the concept of efficiency at Mater Hospital. These were privacy in consulting rooms, time to get served, record retrievals, adequate decision making time, offering diverse outpatient services and use of resources for service delivery. The study found that the least ranked factor was the time it took to get served at Mater Hospital. The responses showed that the patients’ were disagreed with the level of privacy provided at Mater Hospital outpatient services. This finding agrees with Turkson (2009) study which found that there was a high level of privacy in the consulting rooms. Turkson concluded that providing cubicles or screens will assure patients of confidentiality. Patients are more likely to give important medical history information to healthcare providers if there is respect for confidentiality.

Further, the findings also revealed that the patients’ were also dissatisfied with the amount of time it took in decision-making during consultation. This implies that Mater Hospital ranks poorly in decision-making time during consultations thereby reducing their efficiency levels according to the ISO certification standards. This finding corroborate
Norazah et al. (2011) study which found that customers’ perceptions did not exceed their expectations, as they were dissatisfied with the waiting time of more than an hour to receive the service and the healthcare provider did not respond fast enough when there was a problem.

The findings revealed that there was an improvement since ISO certification on the utilization of resources to offer healthcare service delivery for their patients at Mater Hospital. These findings support Abdul Aziz et al. (2013) study on the impact of quality standards and a special customer service program on Customer Satisfaction Index (CSI) concluded that the implementation of quality standards of ISO 9001, MSQH (Malaysia standards) and JCI (American standards) had improved the customer satisfaction index for KPJ Seremban at the rate which is at par with other international studies.

The findings also revealed that there was a positive improvement in records retrieval at Mater Hospital. This finding corroborate Zaramdini (2007) study on the motives and benefits of ISO 9000 Certification: This concluded that Implementation of the ISO standard has been associated with improvement of processes and procedures and increase in employee awareness about quality. Further, health Institutions that have implemented ISO standard have benefitted from improved documentation.

In regard to the inferential statistics the results show that there was a positive and significant association between efficiency and ISO certification. The correlation results show that there was a correlation of 0.039. This finding was confirmed by running a regression analysis which indicated that there was a positive and significant influence of ISO certification on the efficiency of service delivery in Mater Hospital. ISO Certification = -0.251 + 0.568 Efficiency + 0.308 Customer Satisfaction + 0.426 Service quality imply that a unit change in ISO certification has a 57 % influence on efficiency of service delivery at Mater Hospital.

This finding supports Njenga (2009) study which found that ISO 9001 standard improves major hospital performance indicators. Njenga concluded that there was improved efficiency as a result of improved documentation and retrieval of records. Similar studies (Tsai & Wang, 2012; van den Heuvel, Does, Bogers and Berg, 2005) have reported improved efficiency following implementation of QMS in hospitals. Proper documentation and record keeping is one of the requirements of ISO standard (clause 4.2 of ISO 9001:2008).
5.3.2 To Investigate the Influence of ISO Certification on Customer Satisfaction at Mater Hospital

In regard to the level of general satisfaction with services at the mater Hospital, the results revealed that patients were satisfied with the medial care received. However, the results revealed that the medical service received were not perfect. In terms of communication, the study findings revealed that doctors were keen on what patients told them. Wanjau et al. (2012) supports this finding communication is the most important aspect of the service delivery as communication with patients is vital to delivering service satisfaction because when hospital staff takes the time to answer questions of concern to patients, it can alleviate many feelings of uncertainty.

The results show that patients somewhat agreed they received medical care worth their money and also pay for medical care they can afford at Mater Hospital. This finding corroborates Sun and Shibo (2005) argument that there is a need to distinguish “good costs” that improves organizational capabilities and quality service delivery from “bad costs” that increase bureaucracy hence becoming obstacles to service delivery. Sun and Shibo agree that the objective of ISO certification for healthcare service delivery is to provide quality healthcare services which are in tandem with the service offered.

In terms of the time spent with the doctors, the results show a poor ranking of this factor of customer satisfaction in healthcare. This finding support Suki et al. (2011) conclusion that patients’ expectations exceed perceptions of private health care setting in Malaysia, as they felt that a waiting time of more than an hour to receive the service was excessive and that the health care provider did not respond fast enough when there were problems. These findings support Rouzbahani, Min and Soleimani (2013) study on the Studying the Effects of Implementing QMS of ISO 9000:2000 on Improvement of Health Services which found that this led to a reported increased patient satisfaction; reduction in work related mistakes and improved work process in the wards.

The study conducted a correlation analysis between ISO certification and customer satisfaction and found a positive association between the two variables. The results show that there was a positive correlation coefficient of 0.069. The researcher then confirmed this association by performing a regression analysis to identify the influence of ISO certification on customer satisfaction at Mater Hospital. The results (ISO Certification = -0.251 + 0.568 Efficiency + 0.308 Customer Satisfaction + 0.426 Service quality) showed
that a unit increase in ISO certification would have a 30% increase in customer satisfaction at Mater Hospital. These findings support earlier studies on the relationship between ISO certification and customer satisfaction in the healthcare sector. Previous studies (van den Heuvel et al., 2005; Tsai et al., 2012) showed improved patient satisfaction following implementation of quality management systems. ISO requires organizations to monitor and act on customer complaints and take corrective and preventive action (ISO 9001:2008). Psomas, Fotopoulos and Dimitrios, (2010) agree that an increasing number of organizations have developed and adopted ISO systems, in order to increase efficiency, competitiveness and customer satisfaction.

5.3.3 To Investigate the Influence of ISO Certification on Service Quality at Mater Hospital

In order to measure the influence of ISO certification on service quality, the study adopted the five service quality measures (Tangibles, reliability, responsiveness, assurance and empathy). The study found that the tangibles were rated poorly among the respondents. This implies that the physical facilities at Mater Hospital were not appealing to the respondents. In regard to the reliability, the study findings showed that communication and time factors were the most poorly ranked. These included providing services in record time and offering service in prompt time as patients visit. These findings show that patients at Mater Hospital value the time factor and also the interaction that they have with the personnel in the hospital.

The study findings show that responsiveness was rated highly among the several factors listed which included personnel are ready to provide service to me, personnel offer fast and efficient service to me and personnel have the willingness to provide service to me. The study also showed that the assurance factor was highly rated after ISO certification at Mater Hospital. These findings disagree with Zaim, Bayyurt and Zaim (2010) studied the important criteria for measuring service quality for hospitals in Turkey. They confirmed that tangibility, reliability, courtesy and empathy are significant for customer satisfaction, while responsiveness and assurance were not.

The study results show that empathy at Mater Hospital was rated highly. These factors included we understand some of your specific needs we follow up your cases individually, we take your best interests to heart and we gave you a personal attention. This implies that in terms of service quality, Mater Hospital score highly in regards to
empathy. These results validate Irfan and Ijaz (2011) study in Pakistan, which concluded that there was better service quality being delivered in private hospitals than in the public hospitals. Ifran and Ijaz found that this was more in terms of the responsiveness and empathy dimensions of ISO certification.

Kumaraswamy (2012) concludes that perception on service quality factors in health care centers has a significant and positive impact on the patients’ perception on the overall performance of the health care centre. The important discriminant service quality factors among the two type of health care centre are atmospherics and supportive staffs. This finding disagrees with Zarei et al. (2012) study on service quality in private hospitals of Iran which concluded that the highest expectations and perceptions were related to the tangibles dimension and the lowest expectation and perception related to the empathy dimension.

The researcher conducted a correlation analysis between ISO certification and service quality in healthcare service delivery at Mater Hospital. The correlation results show that there was a positive association between ISO certification and service quality with a correlation coefficient of 0.005. The regression results service quality (ISO Certification = -0.251 + 0.568 Efficiency + 0.308 Customer Satisfaction + 0.426 Service quality) imply that a unit change in ISO certification leads to an improvement of 42% in service quality at Mater Hospital. According to van den Heuvel et al. (2005) the ISO 9000 standards are founded on the concept that the assurance of consistent product or service quality is best achieved by simultaneous application of product standards and quality management system standards.

These findings agree with Gotzamani, Tsiotras, Nicolaou, Nicolaides and Hadjiadamou (2007) findings that the greatest improvements from ISO 9001 certification were establishment of a formal process management system, systematic recording of process performance data and systematic monitoring of internal indicators related to customer satisfaction and demand for quality proofs from partners.
5.4 Conclusions

5.4.1 To Investigate the Influence of ISO Certification on Efficiency at Mater Hospital

The study used several statements to measure efficiency at Mater Hospital. These included: level of privacy in the consulting rooms; time you wait to get served; record retrievals; adequate decision making during consultations and utilization of resources for service delivery. The most ranked dimension of efficiency was the use of resources to provide service to patients. The study concludes that there is an effort to utilize both material, financial and human resources to provide quality services for patients after ISO certification. The study concluded that the efficiency at the Mater Hospital has seen a positive improvement since ISO certification.

The study concludes that in regard to efficiency at Mater Hospital after ISO certification there was an improvement in utilization of resources to provide medical care and also in record retrieval. The study concludes that an influence of ISO certification has been on the information process at mater Hospital. The study concludes that the most significant factor of the quality management system has been on the processes and procedures at Mater Hospital outpatient services.

5.4.2 To Investigate the Influence of ISO Certification on Customer Satisfaction at Mater Hospital

The study adopted the patient satisfaction questionnaire short-form to measure customer satisfaction with healthcare services. This tool has been widely adopted to measure customer satisfaction with healthcare services. The study concludes that there was overall satisfaction with the general services offered at mater Hospital. The study concludes that time spent with the doctor was the least ranked dimension of customer satisfaction. The study concludes that due to performance targets, physicians are taking less time with patients to see more patients. The study concludes that this has a negative effect on the patients’ satisfaction with the diagnosis they are given as doctors are in a hurry to finish with them.

The study concludes that in regard to customer satisfaction and healthcare service delivery at Mater Hospital; the most valued factors among patients were financial and time factors. However, the study concludes that there was general satisfaction with the medical services provided at master Hospital. These conclusions suggest that patients
would want to see an improvement in specific areas such as in time spent went with the doctor and also on the financial management factors at the Mater Hospital.

5.4.3 To Investigate the Influence of ISO Certification on Service Quality at Mater Hospital

The study measured the concept of service quality using the SERVQUAL model at Mater Hospital in comparison with ISO certification. The dimensions included were tangibles (5 items), reliability (5 items), responsiveness (3 items), assurance (4 items) and empathy (4 items). The study concludes that the most ranked dimension was empathy, this was followed by responsiveness and the least ranked dimension for customers was reliability in Mater Hospital.

The study concludes that empathy and responsiveness were the most significant effects of ISO certification at Mater Hospital based on the study findings. Empathy refers to the ability of personnel to reflect the perceived needs of the patients whereas responsiveness refers to the exact delivery of service, willingness to help, and efficient allocation of time. The study concludes that the highest expectations for service quality for patients at Mater Hospital were empathy and the responsiveness.

5.5 Recommendations

5.5.1 Recommendations for Improvements

5.5.1.1 To Investigate the Influence of ISO Certification on Efficiency at Mater Hospital

The study recommends for the management of Mater Hospital to improve the design of the outpatient service clinic in order to provide more privacy and confidentiality to patients’. The outpatient service should be provided in an environment that encourages patients to provide information of their health issues.

5.5.1.2 To Investigate the Influence of ISO Certification on Customer Satisfaction at Mater Hospital

The study recommends for management at Mater Hospital to improve on outpatient service delivery. This improvement should include to increase the number of attendants at the registration desks, cashiers and also the number of consulting practitioners to address time-related issues in service delivery.
5.5.1.3 To Investigate the Influence of ISO Certification on Service Quality at Mater Hospital

The study recommends that management of Mater Hospital should focus on improving the physical facilities of the Hospital to provide efficient services to their patients. Management should make sure that they have up to date equipment to provide diagnostic services and information processing.

5.5.2 Recommendations for Further Study

The study was limited to the relationship of ISO certification and efficiency, customer satisfaction and service quality at Mater Hospital. The study recommends for further study on the effect of ISO certification by investigating the difference between hospitals that have ISO certification and those that do not have. The study also suggests for further study on ISO certification effect in public and private healthcare institutions.
REFERENCES


Farsi, M. & Filippini, M. (2006). Effects of ownership, subsidization and teaching activities on hospital costs in Switzerland. Quaderno N 06-06, Lugano, Facoltà di Scienze economiche dell’Università di Lugano,


Jat, T. R., & Sebastian, M. S. (2013). Technical efficiency of public district hospitals in Madhya Pradesh, India: a data envelopment analysis, *Global health action, 6*, 21742 - [http://dx.doi.org/10.3402/gha.v6i0.21742](http://dx.doi.org/10.3402/gha.v6i0.21742)


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APPENDIX I: COVER LETTER

Lilian Agai
Mobile No: 0733996361
Email address: lilianagai27@gmail.com

Dear Respondent

RE: Request To Participate In Data Collection Exercise

I am a graduate student at United States International University pursuing degree of Masters in Business Administration (MBA). I have designed a questionnaire to gather information on the strategic impact of ISO certification in improving efficiency and service quality in private healthcare institutions using the case of Mater Hospital.

The questions in this survey specifically deal with the quality of information you have received regarding your care as well as your level of satisfaction with the catering and amenity services. Some of the questions are multiple choices where you tick the box which most closely reflects your view. Please feel free to make any comments or suggestions on how you think we would improve our standards of care. The aim of this questionnaire is to ensure that future patients who stay with us receive the best possible care.

All the information recorded in this survey will remain anonymous. Results of this questionnaire will be used to improve the quality of the service we give to our patients.

Thank you for taking time to complete this survey.

Yours Faithfully,

Lilian A. Agai (Researcher)
APPENDIX II: QUESTIONNAIRE FOR OUTPATIENTS OF MATER HOSPITAL

Section 1: Background information

1. Gender
   - Male (  )
   - Female (  )

2. Age
   - 18-25 years (  )
   - 26-33 years (  )
   - 34-41 years (  )
   - 42-49 years (  )
   - Above 50 years (  )

3. Education
   - Certificate (  )
   - Diploma (  )
   - Bachelors (  )
   - Postgraduate (  )

4. Income
   - Less than 12,000-20,000 (  )
   - 21,000-30,000 (  )
   - 31,000-40,000 (  )
   - 41,000-50,000 (  )
   - Above 51,000 (  )

5. Occupation ........................................

6. How many times have you visited our Hospital?.................................

Section 2: Efficiency

7. The following factors relate to the service efficiency of Mater Hospital. Please rate to what extent you agree or disagree. 1=Strongly Disagree, 2=disagree, 3=Neutral, 4=Agree and 5=Strongly Agree

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<tr>
<td>Did we provide high level of privacy in the consulting rooms?</td>
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<td>Have we improved in time you wait to get served?</td>
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<td>Did we retrieve your records as fast as you expect?</td>
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<td>Did we give adequate decision making time during consultations?</td>
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<td>Did we have a diverse outpatient services that meets your needs?</td>
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<td>Did we utilise resources for service delivery?</td>
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<td>Is there any other comment you wish to add? (specify)</td>
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72
8. What other service efficiency factors did you notice during your visit?


Section 3: Customer Satisfaction

9. The following factors relate to the customer satisfaction of Mater Hospital. Please rate to what extent you agree or disagree. 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree

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<td><strong>General satisfaction</strong></td>
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<td>I received a perfect medical care from us</td>
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<td>I am satisfied with some of the medical care I receive</td>
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<td><strong>Technical capacity</strong></td>
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<td>Mater has everything to provide competent medical care for me</td>
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<td>I have doubts with some of the doctors who treat me</td>
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<tr>
<td>Mater doctors check everything and examine me before treatment</td>
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<td><strong>Communication</strong></td>
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<td>Mater doctors good in explaining the reason for tests?</td>
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<td>Mater doctors keen on what you tell them?</td>
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<td><strong>Financial</strong></td>
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<td>I am confident I get medical care that is worth my money</td>
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<td>I feel I pay for medical care than I can afford?</td>
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<td><strong>Time spent with doctor</strong></td>
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<td>doctors usually spend enough time with me</td>
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<td>Healthcare providers were not in a rush when they treat me</td>
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<tr>
<td><strong>Accessibility and Convenience</strong></td>
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<td>There is easy access to specialists I need</td>
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<td>I find it easy to get appointment for my medical care</td>
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<tr>
<td>I was able to get medical care whenever I want it</td>
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<td>I waited for too long to get medical care</td>
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<td><strong>Interpersonal manner</strong></td>
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<td>Mater doctors were too “business” like when giving medical care</td>
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<tr>
<td>Mater doctors treated me in a friendly and courteous manner</td>
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10. What other Customer satisfaction issues would you comment on?


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Section 4: Service Quality

11. The following factors relate to the service quality of Mater Hospital. Please rate to what extent you agree or disagree. 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree

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<tr>
<td><strong>Tangibles</strong></td>
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<td>we have Up-to-date equipment to serve you</td>
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<td>the appearance of hospital personnel is appealing to me</td>
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<td>I was offered convenient timing of services</td>
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<td>we have an appealing hospital environment to me</td>
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<td>Our hospital has appealing physical facilities</td>
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<td><strong>Reliability</strong></td>
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<td>services are prompt every time I visit</td>
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<td>solving my problems efficiently</td>
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<td>performance of services to me are right the first time</td>
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<td>I was informed about our operating hours</td>
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<td>I was offered services within agreed time</td>
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<td><strong>Responsiveness</strong></td>
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<td>Mater personnel have the willingness to provide service to me</td>
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<td>Mater personnel are ready to provide service to me</td>
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<td>Mater personnel offer fast and efficient service to me</td>
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<td><strong>Assurance</strong></td>
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<td>Mater personnel have good personality and experience</td>
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<td>Mater personnel have required knowledge for the job</td>
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<td>Mater personnel provide some sense of trust to you</td>
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<td>Mater personnel were polite and courteous to you</td>
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<td><strong>Empathy</strong></td>
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<td>Mater understands some of my specific needs</td>
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<td>Mater follows up my cases individually?</td>
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<td>My best interests were taken to heart?</td>
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<td>I was given personal attention</td>
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12. What other Service Quality concerns did you notice during your visit?

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Thank you for your participation