LOGISTICS MANAGEMENT AND SERVICE DELIVERY OF ORGANISATIONS IN UGANDA

A CASE: KIBOGA HOSPITAL

BY

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DEDICATION

I entirely dedicate this dissertation to my beloved wife who unendingly advised, encouraged and wished me to always aim at succeeding in life and my family members, friends and all my relatives for their tireless efforts, and all their love, moral and financial support accorded so as to enable me compete the course. Classmates as well as lecturers who taught me during the course, may God award you abundantly.

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I thank the Almighty God for keeping me alive and healthy throughout my study period and for giving me all the required grace to fulfill all study requirements while undertaking this Degree program. In a special way, I would like to extend my sincere gratitude to my supervisor, for having unconditionally accepted and exercised utmost patience to guide me in all activities that have led to completion of my dissertation. Without your guidance and commitment, this dissertation would not have been realized. May the Almighty reward you abundantly, keep you healthy and strong. I also thank all the lecturers and classmates from Uganda Martyrs University for their useful academic contributions since this study required a multidisciplinary approach.

My sincere thanks go to stakeholders of Kiboga Hospital for providing information on Logistics Management and how it affects service delivery.

Special thanks to my parents, for the foundation he has laid for me to get this education and to my mother, sisters and their families, my friends and acquaintances for upholding it and providing whatever I needed to complete this course. Thank you for all your time, prayers, love, support, encouragement and accepting the inconvenience with pure hearts. May God the almighty keep you healthy, strong and bless you abundantly.

I would also like to extend my appreciation to family members and respondents from Kiboga Hospital for their unconditional support in the completion of this research and my studies at large. Thank you!

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LIST OF ACRONYMS

EDI:	Electronic Data Interchange
IT:	Information Technology
MRP:	Materials Requirements Planning system
SCEA:	Shippers Council of Eastern Africa
SPSS:	Statistical Package for Social Scientists
SSP:	Strategic Supplier Partnerships
BOU	Bank of Uganda

ABSTRACT

Logistics management is important for any organization, running a hospital is no exception because without enough stock, services to patients come to a halt. Stock represents the largest single investment in assets for most organizations. Health facilities must provide 24 hour services and accordingly, the need to keep stocks of certain medicines and other medical supplies to be able to discharge their duties effectively. It is a generally held opinion that where logistics management by health facilities is poor, delivery of healthcare is normally affected. Hence, this study examined the effect of logistics management on service delivery using Kiboga Hospital, as a case. The study was guided by the following objectives; to examine the effect of transport management, inventory management, order processing and information flow on service delivery in organizations in Uganda. A sample of 92 respondents, were selected for the study and but only respondent 66 returned the questionnaires which were valid for data analysis. Questionnaires and interview guide were used as the main instrument of data collection to get response from the purposive sampled respondents.

From the study objectives, it was seen that on average a 4.36 of the respondents contended that transport management influences in the service delivery, 4.34 of the contended that improvement in inventory management leads to better service delivery and on average 4.33 agreed that improvement in transport management results into a better improvement on the service delivery and on average 4.24, of the respondents' improvement in information flow does not in any way affect the service delivery

Conclusively proper logistics management enhances service delivery in the health organization if well-handled. Logistics management is important for people to use healthcare services, especially services requiring a referral.The study concludes that logistics management affects service delivery in an organization and it is therefore recommended that there is a need for management to emphasize the importance of inventory management, transport management in order to deliver quality services to its clients. Thus, logistics management on service delivery in organization is of great value if well enhanced.

CHAPTER ONE

INTRODUCTION

1.0. Introduction

In recent time, logistics management is very important to many sectors of an economy including the manufacturing, assembly industries and retailing which are goods-oriented. (Mwangangi, 2016).Organizations both in developing and developed economies rely on delivery of service to produce and deliver high-quality products and services in order to satisfy customers. All industries both in developed and developing countries have taken advantage of the use of logistics as a way of responding to the challenges of rising customer demand and pressure from competition.

The purpose of this study is to determine the effects of logistics management on service delivery in organizations of Uganda. This study looks logistics management as independent variable in terms of transport management, inventory management, order processing and information flow whereas the dependent variable is service delivery in terms of quality of service, timeliness, effectively and efficiency. In this chapter, the researcher aims at presenting the background to the study, statement of the problem, research objectives, research questions, significance of the study, justification, conceptual framework, scope of the study, definition of operational terms and conclusion.

1.1. Background to the study

Formerly, Logistics had to do with procurement, maintenance, and transportation of military facilities, material, and personnel. It was also considered a custodial phenomenon where

storekeepers were the custodians of materials stored in small storerooms and large warehouses (Manamzor and Sakabutu, 2016). Beginning from the early 1960's, many elements, such as deregulation, competitive pressures, information technology, globalization, profit leverage, among others, have contributed to the increase in awareness about the essence of logistics science.

Logistics management has always been an important preoccupation of organizations operations but paradoxically it was only recently that it is being accorded attention in the academic and business world (Obiora, 2008). Organizations particularly in the developing economies are known for making detailed planning for the management of financial, personnel and technology resources among others while the logistic aspects of other activities are left to the vagaries of circumstances (Osei, 2015). In a global economy, competitive and dynamic environment, logistics management is an important strategic factor for increasing competitiveness (Mwangangi, 2016). The significance of logistics management had evolved from a more passive and cost minimization oriented activity to a key success factor for firm competitiveness (Osei, 2015). There was therefore an emerging consensus about the need for companies to handle logistics issues together with economic and business issues (Wambui, 2010). The performance of logistics systems was typically related to delivery service, logistics cost and tied up capital. Customers increasingly expected shorter delivery times and more accurate services and logistics management was perhaps most easily conceptualized in manufacturing, since there was a physical flow of goods (Mwangangi, 2016).

Logistics management plays a key role in the economy, and the market volume of logistics had already reached a substantial level in many economies as a result. Companies that were

successful worldwide had long recognized the critical role logistics management played in creating added value (Kangaru, 2011). Logistics management is therefore a critical contributor to the competitiveness of a country. The demand for products could only be satisfied through the proper and cost-effective delivery of goods and services (Lambert andBurduroglo, 2014). In the years ahead, the significance of global logistics markets could continue to increase in response to economic and social conditions.

More recently a World Bank report on logistics performance states that a competitive network of global logistics would be the backbone of international trade and the importance of efficient logistics for trade and growth would be widely acknowledged: Better logistics performance is strongly associated with trade expansion, export diversification, ability to attract foreign direct investments and economic growth, in other words, trade logistics matter (World Bank, 2010). The World Bank acknowledged the importance of logistics performance and initiated a study to measure the logistics competitiveness of countries.It was found out that Africa was not performing well in logistics compared to other continents as the report confirmed that the top four countries were from Europe, the fifth one was from Asia however, the bottom five were all from Africa (Osei, 2015). The top five logistics performers in 2010 were (in order): Germany (4.11), Singapore (4.09), Sweden (4.08), the Netherlands (4.07) and Luxembourg (3.98), and the bottom five were Somalia (1.34), Eritrea (1.70), Sierra Leone (1.97), Namibia (2.02) and Rwanda (2.04) according to Mwangangi (2016).

Shippers Council of Eastern Africa (SCEA) (2013), confirmed that, a country's ability to trade globally highly depend on the extent to which its international traders have access to competent and high quality logistics services. Majority of the international trader's respondents ranked the quality of logistics services in Astern Africa as average (SCEA, 2013). A survey done by SCEA

in 2012, revealed an array of factors that were responsible for the efficiency and cost structure of Kenya logistics chain. They included: logistics cost and efficiency indicator; time indictors related to deliver goods; truck turnaround time; complexity indictors which measured the level of complexity in undertaking trade transactions and customer perception indicators. Comparing the year 2010/2011with 2012, there was an increase of 35.2 percent in shipping freight rates was realized in 2012; Aircraft operating costs increased from an average of USD 3.00 per kilogram in 2010/2011 to an average of USD 4.90 per kilogram in 2012 which reduced types of goods transported by air in the year (SCEA, 2013).

It is therefore clear that logistics management plays a big role in any economy and critically contributes to the competitiveness ofany business. Thailand for instance has embraced new innovative technology and new management thinking to cope with the ever increasing competition from local and global players (Mwangangi, 2016) since pressure was building up and there was a need to catch up if they were to remain competitive (Islam and Zunder, 2013).

Efficient flow of goods and information were only possible if there was a well-developed transport and communication infrastructure (Lambert andBurduroglo, 2014). In Sub-Saharan African countries, these infrastructures are poorly managed. Consequently, inefficient transport and communication form a major obstacle in achieving efficiently organized flows of goods and services. If farmers and manufacturers were to take advantage of reforms in agriculture and other productive systems, dependable transport and communication systems were indispensable. Such systems would be of major importance for the facilitation of internal and external trade. Investments in infrastructure improve logistics, increase productivity and lower production costs according to the World Bank, (2010).

In Africa's health services, logistics management in organizations like health system is very important so far as the achievement of the country's health goals are concerned (Manso, Annan andAnane, 2013). Logistics management is an important role, which coordinates and optimizes all logistics activities, and hence necessities such as drugs and other essential logistics need to be available in hospitals and health centers in order to ensure delivery of quality health care in Ghana (Lambert andBurduroglo, 2014).

The primary aim of health facilities (both public and private) is to provide quality health services to existing and potential clients. This means that, health centers must work hard to provide medical services that are qualitative enough to cure the ailments of patients or clients as well as to attract new customers. This feat can primarily be achieved through the delivery of quality health care service to patients and potential patients. Quality service delivery to clients demands that organisations are well equipped and resourced with the right logistics to achieve products and services. Organisations such as Health security exists when every person is able to obtain quality medical services whenever the need arises.

In the service industry however many businesses especially institutions have not recognized the impacts that commitment of reasonable resources into logistic management can make to the achievement of strategic goals (Adekunle and Olarinkoye, 2012). For instance, cursory examination of annual reports and accounts of many banks indicated significant financial commitment into operational expenses such as marketing, information technology, personnel training and development.

In Uganda, most organizations are under transition. As a result, most of organizations run out of essential materials and other logistics needed for quality service delivery in Uganda. Also, there

is the perception that even though effectiveness of logistics in general is not the best, the management situation is always better in the privately managed organizations than in Health Sector Organisations. Uganda is home to the Uganda Virus Research Institute, considered one of the most advanced viral research facilities in East Africa. Uganda is one of the three countries where randomized controlled trials for male circumcision were conducted to inform the WHO policy decision on voluntary medical circumcision (The World Bank, 2013*).*

Kiboga Hospital is a government owned hospital with a status of a general hospital. The Hospital started as a Dispensing and Maternity Unit in 1960 situated at the current town council offices. The Member of Parliament Mr. Kalema lobbed for the hospital for Kiboga and the construction of this Hospital kicked off during the Obote 1 regime and opened by Amin Dada on the 7th July 1973. It is situated 76 miles along Kampala Highway. It has a projected population of 268,100 by 2006 with a service area covering the areas of Kubuya, Kyankwanzi, Kiboga, Kibaale, Part of Luwero, Nakaseke and part of Hoima District. It has a bed capacity of 210 beds with an approximated annual budget of 142 million shillings recurrent and 92 million shillings for drugs all from the Ugandan government budget. Partners like the Infectious Disease Institute supplements with funds for HIV Clinic (Ministry of Health Uganda, 2016).Kiboga hospital receives over 40,000 patients from its catchment districts of Kibale, Mityana, Mubende, Kyankwanzi and Kiboga per year.

Some of the challenges that face the hospital include, inadequate finances, few administrative vehicle (Challenge when it comes to the ambulance), problem of power cuts (Costly to run the generator due to UMEME cuts/blackouts), little or no contribution from the district (under the

district control but nothing is availed by the district), inadequate supplies of everything such as medical supplies, sundries (Sangeeta, 2016).

1.2. Problem Statement

Effective and efficient logistics management activities lead to value addition and cost minimization as well as quality of service delivery (Lambert and Burduroglo, 2014). The efficient service delivery of any organization demands a planned flow of resources to service its activities up to the final consumer (Manamzor and Sakabutu, 2016).

Today, in most health institutions, clients still complain that resources are not available in most of Uganda's hospitals, despite the efforts done by the government to increase on the budget allocation to the health sector (from UGX 1.270 trillion to UGX 1.853 trillion) (Budget Speech 2016/2017, (BOU Website, 2017). Report by Stakeholder Democracy Network (USDN 2013) shows a striking deviation from the pronouncements of the Uganda government with regards to providing quality healthcare services to citizens, which is assumed to be as a result of poor logistics management. The problem of the logistics management in Hospitals is a serious threat to the already constrained access to medicines and health service delivery in Uganda. In many hospitals, there is unavailability of medical supplies at the right time and right quantity which increases death rates, expiry of drugs and poor service delivery in general. Therefore, this research is intended to avail stakeholders of health institutions about how logistics management can affect service delivery in Organizations of Uganda, a case study of Kiboga Hospital.

1.3. Main objective of the Study

The main objective of the study is to examine the effect of logistics management on service delivery in health Organizations in Uganda. The study will use a case of Kiboga hospitalin

Uganda.

1.3.1. Specific Objectives

The study aimed at achieving the following objectives;

i) To examine the effect of transport management on service delivery in healthorganizations in Uganda.

ii) To evaluate the effect of inventory management on service delivery in healthorganizations in Uganda.

iii) To examine the effect of order processing on service delivery in healthorganizations in Uganda.

iv) To establish the effect of information flow on service delivery in healthorganizations in Uganda.

1.4. Research Questions

This study aimed at answering the following questions;

i) Does transport management affect service delivery of healthorganizations in Uganda?

ii) What effect does inventory management have on service of healthorganizations in Uganda?

iii) What effect does order processing has service delivery of organizations in Uganda?

iv) Does information flow affect service delivery in healthorganizations in Uganda?

1.5. Scope of the Study

1.5.1. Content Scope

This research specifically focused on the effect of logistics management on service delivery of

organizations in Uganda. The study specifically looked at how Transport management, Inventory management, Order processing and Information flow affect service delivery in form of Timeliness and Quality of service.

1.5.2. Geographical Scope

The study was carried out from Kiboga Hospital. The hospital is located on the Kampala – Hoima road, in the central business district of Kiboga town, approximately 77 kilometers (48 miles) southeast of Hoima Regional Hospital. This is about 121 kilometers (75 miles) northwest of Mulago National Referral Hospital. The coordinates of Kiboga General Hospital are:0°54'43.0"N, 31°46'35.0"E (Latitude: 0.911937; Longitude: 31.776378). The study will also be limited to managers, doctors, medical assistants, employees and some clients who have been in this organization for at least 1 year and hence have experienced various logistics management and service delivery.

1.5.3. Time Scope

The study took a period of three years between August 2014 to April 2017 and it took take 6 months to enable the researcher get enough data for data analysis. This is the period when the researcher realized complaints from clients (Mukisa, 2016) about poor service delivery with an assumption that it is due to logistics management.

1.6. Justification of the study

Logistics management is a supply chain management component that is used to meet customer demands through the planning, control and implementation of the effective movement and storage of related information, goods and services from origin to destination (Mwangangi, 2016; Spillin, *et al.,* 2013). Logistics management therefore plays an important role of adding

competitive advantage to a firm in customer support and business excellence (Buyukozkan, *at el.*, 2008). Low logistics efficiency is a key concern and business risk for firms importing to or exporting from Uganda as well as the logistics service providers involved (Mukisa, 2016). The Government of Uganda has always been committed to developing a mixed economy where both public and private sector companies are present (Rwendeire, 2012). Public participation in manufacturing sector is much smaller than the private sector and is still decreasing due to government's change of policy; the emphasis is now being given to privatization of the industrial sector. Due to this, effective logistics services have become a critical issue for government in order to improve service delivery in Uganda. This calls for inclusion of logistics management on government's policies for the government to achieve vision 2030 on manufacturing sector (Rwendeire, 2012).

However, there have not been enough researches done to combine the possible links between logistics management and service delivery in organizations of Uganda (Ojokuku, Odetayo and Sajuyigbe, 2012), hence need for the study. Studies have always been limited to specific cases and therefore a strict limit of the research areas has been given. So, we really do not have any knowledge concerning planning, implement and control, flow and storage and their effect on service delivery of health organizations Uganda.

1.7. Significance of the Study

The study findings are aimed at benefiting;

A research into the area of the effect of inventory management on healthcare delivery is relevant for several reasons. First, it is going to help the health sector to roll out efficient and effective logistics management policies for the hospitals. Thus, the study will bring out how the hospitals

will manage its inventory policies so as to be responsive and at the same time efficient in its downstream activities thereby increasing the value chain of the supply chain (which is also known as supply chain profitability).

The study will also be beneficial to the general public and the entire population because it will come up with appropriate suggestions on how timely and in the right quantities that inventory would be managed in health care delivery so as to be able to satisfy their requirement. The economy of the country also stands to benefit from the research in this area since it is going to help the public institutions improve in their inventory control.

The benefit of sharing information among researchers is another reason for the study. Thus, the information provided in the study is useful to researchers who might want to undertake further research into the area of logistics management in the public sector. This study is undertaken to enhance the frontiers of knowledge by adding up to literature on inventory management practices in service industries (health sector) and its effect on the service that is delivered in the hospital.

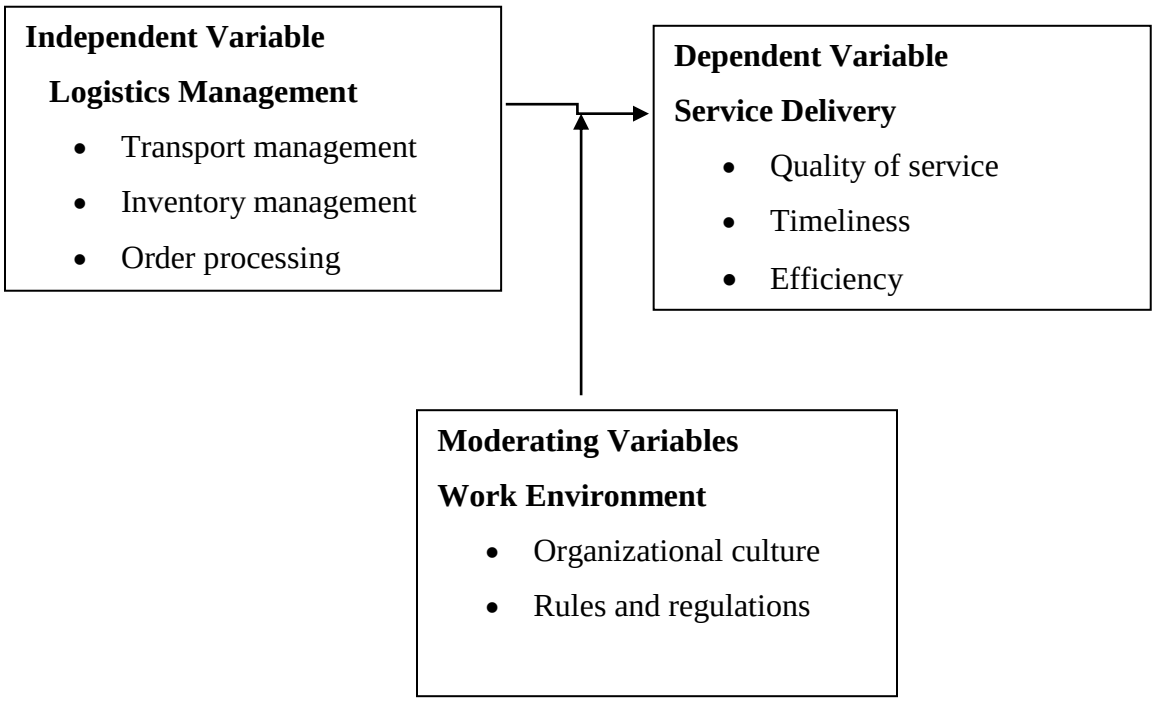
Furthermore, the study serves as management policy guide for the Stakeholders in the Health Sector since the study will reveal the state of the hospital's logistics management practices and also the level of service delivery to the clients (patients). Management can hence use the results to determine how best to run operations.

I, as a current student, will gain from this study, in way that it will broaden my understanding of research methodology and methods, logistics management and its effect on service delivery of

organizations in Uganda.

1.8.Conceptual Framework

Figure 1 Conceptual frame work



Source:Hearty and Morley (2013), modified by the researcher (2017)

Conceptual framework is a set of coherent ideas or concepts organized in a manner that makes them easy to communicate to others (Ong, 2012). Figure 1.is the conceptual framework showing the relationships between independent and dependent variables, as well as intervening variables for the research problem. Managing logistics effectively is important for any organization,

running a hospital is no exception because without proper logistics management, services to patients will come to a halt.

Logistics management represents the largest investment in resources for most organizations. Health facilities must provide 24 hour services and accordingly, the need to have proper logistics management of certain medicines and other medical supplies to be able to discharge their duties effectively. It is a generally held opinion that where logistics management by health facilities is poor, delivery of healthcare is normally affected.

The independent variable is conceptualized as logistics management (Transport management, Inventory management, Order processing and Information flow) (Northouse, 2013; Riley, 2012; Erkutlu and Chafra, 2012). On the other hand, the dependent variable is conceptualized as service delivery (timeliness, customer satisfaction, efficiency and effectiveness) (Organ, 2008; Farh, Chen-Bo and Organ, 2004). The independent variable has been shown to have an effect on dependent variable (Bell and Menguc, 2012; Ojokuku, Odetayo and Sajuyigbe, 2012), for example, Ojokuku, Odetayo and Sajuyigbe (2012) and Hearty and Morley (2013) found out that logistics management is system that plans, implements and control the efficient, effective flow and storage of goods and services as well as related information from the point of origin to the point of consumption to meet customer requirements. The imperatives of logistic management, according to Rafele (2004) are that it makes available the right product, in the right quantity to the right customers at the right place and at the right time and cost. Resource acquisition and channeling are integral aspects in organisation operational planning as it influences the quality of service (output) and branch efficiency.

Movement of resources for organisation's various activities depend on the quality of supply-chain system and interface between operational requirement and service delivery; a time, place and utility interaction. Reporting relationship within an organization will determine the quality of communication flow as well as resources deployment.

This study therefore reviews previous academic postulations as regard the nature of organizational structure that prevails within the organisation system. However, efficiency of resource movement between component units of an organization has implications on its operational cost. Attempts are further made to investigate among others; the cost implications occasioned by resource channeling within a hospital structural network what improvement models are available as means for enhancing logistic management of resources within this structure. Other factors such as other organizational culture, rules and regulations, customer demands (High house and Hoffman, 2011) have been taken into consideration because of their moderating effect on the dependent variables.

1.9. Definition of key terms

Logistics; Logistics refers to the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services and related information from point of origin to the point of consumption for the purpose of conforming to customer satisfaction.

Logistics management; Logistics management is the part of supply chain management that plans, implements and controls the efficient, effective forward, reserves flow and storage of goods, services and related information between the point of origin and the point of consumption

in order to meet customer's requirements. Under logistics management, this study will focus on Transport management, Inventory management, Order processing and Information flow.

Transport management; Transport management refers to the processes involved in the planning and coordination of delivering persons or goods from one place to another. This includes delivering supplies from the supplier to the hospitals. The transportation managers are responsible for the complete reception and effective shipment of suppliers to the organization.

Inventory management; Inventory management is the supervision of non-capitalized assets (inventory) and stock items. As a component of logistics management, inventory management supervises the flow of goods from manufactures/suppliers to warehouses and from these facilities to point of sale.

Order processing; Order processing is the process or work-flow associated with the picking, packing and delivery of the picked items to shipping carrier. Order processing is a key element of order fulfillment. Order processing operations or facilities are commonly called distribution centers.

Information flow; Information flow deals with the flow of information between stakeholders within the organizations that in turn form a value creating network. Information need to be managed before a sale is made, while satisfying the sales order and during after-sales maintenance. Responsiveness to customer demand and overall customer satisfaction cannot be

achieved without proper management of both the goods movement and information flow thought the logistics management.

Service delivery; Service delivery is a component of business that defines the interaction between providers and clients where the provider offers a *service*, whether that is information or a task, and the client either finds value or loses value as a result. Good service delivery provides clients with an increase in value.

Conclusion

This chapter presented the background of the study, the research problem statement, the significance, the scope of the study, the research methodology, the significance of the study and the limitation of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

The chapter explains the theoretical contributions from various authors on how Logistics Management affects the Service Delivery of Organizations. The literature will be organized under sections of theoretical framework, overview of variables, actual review and conclusion.

2.1. Theoretical Review

As Defee.et al. (2010) stated that good research should be grounded in theory; this study will be guided by institutional theory and socio-economic theory. The institutional theory is the traditional approach that is used to examine elements of public procurement (Davis, 2014; Obanda, 2010). This study was based on socio-economic theory;

Socio-economic theory

Sutinen and Kuperan (1999) propounded the socio-economic theory of compliance by integrating economic theory with theories from psychology and sociology to account for moral obligation and social influence as determinants of individuals' decisions on compliance. According to Lisa (2010) psychological perspectives provide a basis for the success or failure of organizational compliance. Wilmshurst and Frost (2000) also add that the legitimacy theory postulates that the organization is responsible to disclose its practices to the stakeholders, especially to the public and justify its existence within the boundaries of society. This theory, which focuses on the relationship and interaction between an organization and the society, provides a sufficient and superior lens for understanding government procurement system (Davis, 2014; Hui*et al*., 2011). From this theory, we can understand the policy, planning and

sustainable procurement practices in public institutions and their influence on service delivery to the society.

There are various research and theories when it comes to the study of service delivery but this study seems to agree with the socio-economic theory (John *et al*., 2009) and institutional theory (Edward O'Boyle, 1996; Scott, 2008) and argued against theories used in the studies of service delivery within the energy sector. It is based on the fact that, other scholars using the political economic (Jain, 2006; Golden & Min, 2012) as well as accountability and transparency (Dixit *et al*., 2007; Joshi, 2010) issues as their central themes to their proponent for the need to addressing service delivery in the energy sector and ignoring the procurement issues. Even though politics, accountability and transparency play an important role to addressing short comings in the service delivery sector, it neglects the procurement issues that require policy, planning and environmental issues that to some extent requires policies and that in effect has political as well as socio-economic implications.

The impact of transparency and accountability on service delivery has always been the underlying motive in the literature of service delivery (Joshi, 2010). Accountability as central theme of the debate on service delivery however, only took root after the World Development Report of 2004 which identified failures in service delivery squarely as failures in accountability relationships (World Bank, 2004). Unsurprisingly, governance of the electricity sector has been a subject of previous studies, which tend to cover the power sector as a whole or the wider energy sector (IEA, 2011).These have tended to focus on specific issues such as transparency and accountability or users' experiences (Jain, 2006; Golden & Min, 2012), but have not looked at particular types of electricity services hamper by procurement policy, planning and sustainable

practices, their characteristics and the implications for incentives and accountability relationships.

For example, the Electricity Governance Initiative (EGI), led by the World Resources Institute and Prayas Energy Group, addresses the transparency and accountability of decision-making processes in the power sector (Dixit *et al*., 2007). The toolkit (with 64 indicators) developed for the EGI allows assessment of policy and regulatory processes and the social and environmental effects of policymaking and implementation in the sector as a whole. Application of the toolkit in India and South Africa has focused on power sector reform (EGI South Africa, 2007; Mahalingham*et al*., 2006). Other studies have examined "users experience" of electricity services from a political economy perspective, in a specific location or concerning a specific aspect of electricity services, such as subsidies or theft (Golden and Min, 2012). The literature on such experiences is dominated by South Asian cases, including that of Oda and Tsujita (2010), who provide one of the few statistical studies.

Consequently, this research is intended to look at the procurement factors (procurement policy, procurement planning, and sustainable procurement practice) that have an influence on service delivery in Uganda. New public management (NPM), which emerged in the 1990's, emphasized the use of market mechanisms within the public sector to make managers and service providers more responsive and accountable (Bailey,1999). The institutional theory is the traditional approach that is used to examine elements of public procurement (Obanda 2010). Thereby, by understanding the steps involved in the procurement process for equipments and materials that are needed for transmission and distribution of electricity, real cost of goods and service can be understood.

However,socio-economic theory is weak when it comes to the implementation of sustainable procurement policy and practice in organizations that serve the public. This is a matter of organizational culture and the degree to which the prevailing climate in an organization is supportive of sustainability and/or of change in general. In other respects, this dimension includes the extent to which there is support for SP at senior levels in an organization and the degree to which organizational processes and structures support, or retard, the development of SP (Davis, 2014).

2.2. Actual literature review

2.2.1. Transport management and service delivery in heath organizations

Transport is identified as a key constraint on achieving the child and maternal health goals in many of the developing countries in Africa (World Bank, 2011). It is clear that transport and health are inextricably linked. Transport has major health impacts – through accidents, levels of physical activity undertaken, effects on air pollution, and access to a range of services. Although there are different mode of transport (or means of transport or transport mode or transport modality or form of transport) but the term used to distinguish substantially different ways to perform transport. The most dominant modes of transport are aviation, rail transport, road transport and water transport, but other modes also exist, including pipelines. They fall into one of three basic types, depending on over what surface they travel – land (road, rail and pipelines), water (shipping), and air. The study will basically look at road transportation given vehicle the upper hand over motorbikes/cycles.

WHO/UNICEF (2010) starkly describes the consequences of inadequate transport for the delivery of basic health care: "The most impoverished – usually rural areas have few or no health

care facilities, or the means to transport people for medical assistance. About 90 per cent of children dying die at home, often without their families even seeking health care". Lack of transport and cost of transport are important reasons why people do not use healthcare services, especially services requiring a referral (Krasovec, 2014). Health services are often not accessed by the very poor and by women in particular. Key obstacles for assessing healthcare service are healthcare charges, long distances to facilities, inadequate and unaffordable transport systems, poor quality of care, and poor governance and accountability mechanisms. Problems with transport also affect the ability of staff to deliver health services. Access to appropriate transport services is a major issue for communities isolated by their remoteness, or as a consequence of social, cultural or economic factors use of health care services declines as the individuals' distance from the facility increases (Broni, *et al*., 2014). Distance has been related to delays in treatment, increased mortality for some health problems such as ischemic heart disease. Lack of accessible, affordable and timely public transport is a risk factor for health. There must be smooth and prompt vehicles to address emergence cases and referral cases at every level of health care (whether the lower level or the higher level of care). From literature review transport causes delay in deciding to seek care and in receiving care at health facility were identified as contributing to deaths among women with Obstetric complications (Krasovec, 2014; Lindelow, 2013).

The spatial location of branches relative to the head office requires strategic planning for transportation activities by health institutions. According to West worth (1992) such activities as carrier selection and negotiations, rate analysis, freight claims processing and documentation are typical transportation process. A logistic plan is required in establishing a process of moving material, and staff between branches and head offices as well as from their homes to office. A

bank can appoint a transport manager to either maintain a private fleet of vehicles (purchased/leased) or manage specific contract with transport firm that provide exclusive (contract service) or manage relationship with a transport company that offers point-to-point transfer at specified charges (Roundy, 2015; Schroeder, 2010). The needs for a specialist manager borders on cost, speed and consistency of service. Furthermore, the needs for planning the mode of selection; service assurance negotiations, regulatory matters, budgeting annual requirements, information-management and executive development have grown beyond the application of the rule of thumb.

In addition, Lule, Ramana and Nandi (2015) say that transport infrastructure and services have significantly improved the livelihoods of poor people living in rural areas. Transport facilitates the timely and affordable delivery of basic health, education, water and sanitation services, it connects communities to markets and information, and can empower vulnerable groups.

The organization of health services can add to or alleviate all these impacts, as well as making it more or less difficult for patients, relatives and staff to travel to and between healthcare settings. This is supported by Broni, *et al*., (2014) who argue that the provision of transport services (including issues such as car parking) have major cost implications, as does addressing the health issues associated with transport. Transport issues are an element in meeting a range of health service aims, including those set out the in national service frameworks and other policy documents, and in the health service environmental standards. There are significant inequalities in the impact of transport on the health of individuals and communities, both directly (for instance through the social distribution of child pedestrian deaths); and indirectly (such as through the influence of planning decisions to accommodate car access). This work looks at

some of the reasons why health managers should be concerned with transport management. It also looks at some practical approaches to managing transport.

Mudzamba (2008) conducted a study in the Eastern Cape province of South Africa with a view to understanding the impacts of transport to healthcare service delivery. Their findings demonstrated not only the need for improved transport services in the delivery of health, but also the importance of using the right type of vehicles. Their study also revealed that during the rainy season, it was exceedingly difficult for delivery vehicles laden with drug supplies to access health facilities largely because of poor road infrastructure running along hilly, often broken and generally difficult terrain that characterize the province. In wet weather, these roads become muddy and slippery. In fact, health transport problems are indeed most severe in the wet season for most rural areas not only in South Africa but also in other developing countries (McCray, 2004). This severity is felt much more keenly in emergency cases.

In a study done by Murrayand Pearson (2006) in Namibia, it was demonstrated that transport for emergency cases comes at a higher cost for people living in rural and largely marginalized areas. Very often, patients get too exhausted or die while waiting for Ambulances, which take over three hours on average to report at the scene after a callout. In South Africa, there is a huge backlog in terms of the provision of emergency medical services (EMS) especially in the public health sector.This situation is exacerbated by the short supply of specially designed and equipped vehicles as well as well-trained staff or paramedics – the hallmark of EMS. Small wonder then that organizations such as the Southern African Rural Poverty Network (SARPN) have clamored for the generation of a national EMS strategic plan (as part of a concerted efforts to achieve the

Millennium Development Goals) using the 2010 FIFA Soccer World Cup as a fillip (Musa, 2012).

Lack of adequate and affordable transport services particularly in remote rural and marginalized areas, under-girded by sound transportation infrastructure, are obstacles to achieving meaningful service delivery. Clearly, without proper transport infrastructure and services, healthcare facilities in these areas will remain under-serviced in terms of maintaining adequate levels of medical supplies and retaining medical staff as well as eliciting confidence and therefore regular utilization of the facilities by locals (Nancollas, 2009). As part of the overarching framework of the National Transport Policy for South African, it is envisaged that policies in the transport sector will be outward looking, shaped by the needs of society in general (Porter, 2007). Among those needs is transport for health service delivery. The importance of transport services is summarized by Hall *et al* (2006) as:

"…Adequate and appropriate vehicles, which are efficiently managed, are essential for delivery of quality healthcare within a health system. The correct number and vehicle mix, suitable for topographical area in which the service is provided, is required. A comprehensive management system for monitoring and evaluating transport services is essential…"

People travel in order to gain access to goods, services, employment, friends and family, leisure pursuits and healthcare. Many people travel much greater distances than in the past for routine purposes, as a result of the increasing affordability and accessibility of driving. Overall motoring costs are at or below 1980 levels, over which time average disposable income has increased by 90%, and planning decisions are based around the expectation of car use by all (Sintasath, 2014).

Consequently, a survey conducted by Department of Transport, UK showed that 28% of households who are without access to a car find it harder to travel to get to shops, employment, healthcare and other services. While only 7% of those in the highest income quintile have no access to a car, 62% of those in the lowest income quintile are without such access (Starkey, 2012). Access to appropriate transport services is a major issue for communities isolated by their remoteness, or as a consequence of social, cultural or economic factors (National Public Health Partnership, 2001). People who do not have their own means of transport suffer considerable disadvantage within the community, particularly if they live in low density areas. Use of health care services declines as the individuals' distance from the facility increases. Distance has been related to delays in treatment, increased mortality for some health problems such as ischemic heart disease.

A study conducted in the village of Vanathavillu in the north-western Province of Sri Lanka by Starkey (2011) illustrates that even where rural communities are better served with intermediate and motorized transport and a paved road, transport of those who are too ill to travel by bus is prohibitively costly. Added to this is the problem of gaining access to medical staff once the health outlet has been reached. Due to the low ratio of health workers to the populations they serve, villagers need to travel early and queue for many hours if they are to have any chance of being seen by qualified medical staff.

There are few studies that have quantified the health impacts of poor transport to health facilities in developing countries. A few case reports have been published and these are discussed in the context of rural poverty, gender and health. The distribution of health facilities in rural areas is

usually sparse, particularly of hospital-based facilities (Shehu, Ikeh and Kuna, 2007). Contrary to this, there is usually a concentration of health facilities and manpower in urban areas, where disproportionately more health professionals are also found. It is in rural areas where transportation and other infrastructure may also be at their most deficient and where the effect of poor transport on health is likely to be greatest.

Transport costs of accessing health facilities have been calculated to represent 25% of the total outlay on health in north-east Brazil (Terra de Souza et al 2000) and 28% in Cameroon (Sauerborn et al., 1995). Wyss et al (2001) in a study of the costs of TB care for households in urban Tanzania found that households spent between US $13 and $20 accessing drug therapy during their short-course treatment using the cheapest forms of transport. Research findings from Bangladesh reveal that in the breakdown of patient costs, travel to service centre requires the greatest financial outlay of all health costs after expenditure on medicines (Seddon and Shrestha, 2012). For HIV/AIDS patients undergoing treatment, the costs of transport to health facilities represents an extreme burden on financial resources already under strain from reduced income and productivity of patients and their careers. In Chad, a study by Ronsmans and Graham (2006) revealed the costs of transportation using public services to be the second greatest expenditure for AIDS patients after that of medicines. Transport is a critical area in health care access, serving as a link between home and health facilities. In developing countries, poor road network and absence of regular means of suitable transport leaves rural areas inaccessible, making physical access to specialized health care, which is not provided in local health facilities, difficult. This significantly and adversely affects the achievement of maternal and child health outcomes despite tremendous work going on in developing countries (Essien et al., 2007).

The problems caused by the lack of reliable, well-maintained rural road systems are worsen by the lack of motor vehicle capacity caused by relatively small vehicle fleets and the poor condition of the vehicles that exist in these communities. Survival and continued use of many vehicles have depended on the ingenuity of good indigenous mechanics in modifying vehicles to the prevailing conditions including the spare parts available. Notwithstanding these remarkable achievements, vehicle capacity and availability remain inadequate. Even where motor able roads exist, transport services are unreliable and infrequent in most rural areas; where available, such services are for-hire and the majority of rural inhabitants cannot afford them (Ronsmans& Graham, 2006).

Still, adequate and appropriate vehicles are essential for health service delivery. Hall (2016) supplements that these are required for transport and transfer of patients from community to health facilities and between levels of health care delivery of essential equipment, medicines and other supplies to point of service delivery transport of health workers for supervisory visits, to attend meetings and training sessions and for administrative purposes. A transport management system that is efficiently and cost effectively run is essential to ensure availability of vehicles for health service delivery when required. One reason why health managers need to be concerned with the management of transport for health service delivery is that transport costs are the third largest part of most district health budgets (after staff and drug costs), and often the largest part of the budget under the direct control of the district manager.

2.2.2. Inventory management and service delivery in health organizations

Inventory management systems obtain and move supplies and equipment to places where they are needed in a timely manner and at an optimum cost. Supplies and equipment usually cannot go directly from their source to the end user. They frequently must be held in the warehouse at some points along the way. In view of this warehouse of supplies maintained and inventory of supplies and equipment are held at all levels in the Ghana Health Service (GHS) (Osei, 2015). The inventory management system recognizes that staffs at all levels have a wide range of responsibilities (USAID, 2013). Access to essential medicines and supplies is fundamental to the good performance of the Healthcare facility and is commonly cited as the most important element of quality by healthcare consumers and, the absence of medicines and supplies is a key factor in the underuse of government health services. In Ghana health system all commodities procured at the National level are stored at the Central Medical Stores (CMS). The Tertiary Hospitals, Regional Medical Stores (RMS) and even private sector suppliers then get their supplies from the Central Medical Stores (WHO, 2012).

Regional Medical Stores, Hospitals and other facilities in the various regions also procure from the two sources where the regional level procurements are done, but these are done by first visiting the Central Medical Stores and Regional Medical Stores respectively, and obtain a non-availability certificate when the commodities are out of stock which allows them to go ahead and do their purchase outside the CMSs and RMSs. Therefore, in the Ghana Health Service (GHS), after the commodities have been procured, they are transported and stored in a number of intermediate facilities at different levels before reaching the health facilities which enables clients obtain the services they were seeking (Scott, 2014).

The Government of Kenya in recent years has been implementing numerous health sector reforms with health systems strengthening at the core of the reform agenda through the support of Kenya Medical Supplies Agency (KEMSA). This work includes supporting the national government to formulate key policies and guidelines while assisting counties to better plan, manage and finance quality health services to meet local needs (Duclos, 2008; Metters, 2007). KEMSA offered improved stock management through computer software, and infrastructure for temperature and humidity controls, and hiring of skilled personnel on the area of supply Chain.

However, it has been criticized as being as taking the role of a Stockist, rather than operating according to the 'just-in-time' (JIT) principle (Piasecki, 2011; Duclos, 2008). Piasecki has indicated that adequate storage and inventory control is a challenge, many drugs expire before they can be used, or they are they reach the service delivery point, which might be a health facility, laboratory, or community health worker (USAID, 2006).

Kenyatta National Hospital (KNH) is the largest referral hospital in East and Central Africa. Founded in 1901 with a bed capacity of 40 as the Native Civil hospital, it was renamed the King George VI in 1952. Kenyatta National Hospital has a capacity of 1800 beds and has over 6000 staff members. According to 2013 – 2014 budgets, Kenyatta National Hospital was allocated a budget of 1.2 billion Kenya Shillings of which more than 700 million was towards the purchase of medical Equipment, Pharmaceutical and Surgical materials (Oballah, Waiganjo and Wachiuri, 2015; Monczka, *et al*., 2008).

Much work has not been done to determine the effect of inventory management and healthcare delivery. According to Oballah et al. (2015), inventory investment and inventory records accuracy have a positive influence on organizational. Also, Anichebe and Agu (2013) in their

study also concluded that there is significant relationship between good inventory management and organizational effectiveness. Inventory management has a significant effect on organizational productivity. There is highly positive correlation between good inventory management and organizational profitability. The study concluded that Inventory Management is very vital to the success and growth of organizations.

Finally, Ogbo et al. (2014) also sought to determine the relationship between effective system of inventory management system and organizational performance in the Seven-up Bottling Company in Enugu, Nigeria. They concluded that organizations benefit from inventory control management by way of easy storage and retrieval of material, improved sales effectiveness and reduced operational cost. The study also found that there is a relationship between operational feasibility, utility of inventory control management in the customer related issues of the organization and cost effectiveness technique are implemented to enhance the return on investment in the organization. Effective inventory control management is recognized as one of the areas management of any organization should acquire capability.

Hospitals are complex organizations providing large number of services of patients, physicians and staff. These services include dietary, linen, housekeeping, pharmacy, laboratory, surgery, administration, and others. Each area has specific and unique material and supply need creating a requirement in these facilities for supply management system that can provide the necessary supplies when needed (Roundy, 2015). In the current scenario of increasing health care costs, systems inventory must be optimized without sacrificing the level of service provided.

Good inventory management is essential to the successful operation of any health care organization, for a number of reasons. One of the most important is the proportion of the

organizations' budget that represents money spent for inventory. Although the amounts and dollar values of the inventories carried by different types of health care providers vary widely, in a typical hospital's budget 25 to 30 percent goes for medical supplies and their handling. On the national scene, health care supplies constitute 8 to 9 percent of health care expenditures. According to Burns (2002), of supply costs, 15 to 23 percent is for pharmacy, 30 to 50 percent is for medical-surgical supplies, and 11 to 24 percent is for equipment. Clearly, medical supplies require significant attention in health care budgeting. Furthermore, a widely used measure of managerial performance is the return on investment (ROI), which is profit after taxes, divided by total assets. Because the inventory of medical supplies may comprise a significant portion of a health care organization's total assets, reducing its inventories significantly raises its ROI, and hence its position in the financial markets. Health care managers must be able to manage the inventory of medical supplies effectively.

Drugs and Medicines being expensive and resources limited, it becomes imperative to improve their supply, increase the use, and minimize the cost through a pharmaceutical management system to be effectively put in place. There are some 3000-4000 drugs at any point in time, registered in any country; of which almost 70% are non-essential (WHO, 2010). Ideally, a National list of essential drugs should have 300400 drugs; a district hospital needs some 150 to 200, while a health center can manage with 4050 drugs.

Shorter the list, it is easier to manage, procure and offer to the patients within the resources available. A typical hospital spends 25-30% of its budget on medical supplies and their handling. Similarly, a recent survey on health care providers found that each year these providers spent more than $100 million on supply chain activities, which was "nearly one-third their annual operating budget (Padmanabhan, Lee and Whang, 2007). Furthermore, about half of health care

providers had supply chains that were described as immature based on those providers' survey responses. A survey of large retailers showed that on average they have high success in both controlling supply chain costs and maintaining flexible capacity to meet market needs predicted considerable efficiency gains through adoption of retail best supply chain practices in healthcare.

2.2.3. Order processing and service delivery in health organizations

During order processing, Plasecki (2001) argues that there must be Economic Order Quantity that point at which the combination of order costs and inventory costs are the least. Lysons and Gillingham (2003), supplements that Economic Order Quantity as the optimal ordering quantity for an item of stock that minimizes cost.According to Lysons and Gillingham (2003), to calculate the Economic Order Quantity, a mathematical model of reality must be constructed. All mathematical models make assumptions that simplify reality. The model is valid only when the assumptions are true or nearly true. When an assumption is modified or deleted, a new model must be constructed. Economic Order Quantity approaches have proven to be effective inventory management technique when the demand and lead time are relatively stable, as well as when significant variability and uncertainty exist.

Poor order listing can also increase the lead time in the public healthcare. A rational listing of order leads to a better supply, lower costs and a more effective prescription and use of drugs in the health facilities. Orders that are poorly selected and listed will increase the costs of holding those orders supplies and increase an unnecessary waiting time for essential supplies that are needed by the target population whereas, poor order sorting occur when the medical supplies and drugs sorted are not arranged in sequence or by appropriate prescription pattern to remedy prevailing health condition in provide effective healthcare operations (Osei, 2015).

Ordering cost also greatly influences the increase in the lead time in the public healthcare system. The size and frequency of orders is affected by how much lead time is required before a delivery can be made. Also, the facility's location relative to the supplier may affect ordering cost. For example, a public healthcare center located near a medical warehouse will probably receive frequently deliveries than a healthcare center located a distance from the medical warehouse. Bureaucracy in government increases lead time as well. Bureaucracy in government is good if it allows order. But, if care is not taken it makes a system rigid and this causes unnecessary delay in implementation of policies, projects, whatsoever (Sangeeta, 2016). This also affects the healthcare system most especially in the absence of one or more decision makers, which will cause the loss of lives. Bureaucracy in government will increase lead time in the public health service as it will resist changes, creativity and timeliness.

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Order packaging may increase lead time in the public healthcare if the medical drugs and equipment is not safeguard against damages and be suited for ensuring safe transport. Order packaging also affects supply chain effectiveness within the healthcare system because it represents and interfaces between the supply chain and it customers.

2.2.4. Information flow and service delivery in health organizations

In every areas of production, order processing, demand forecasting and customer demand functions are interrelated (Johnson and Wood, 1996) that require proper information flow. A service enterprise also faces order processing in kindred transactions like foreign exchange, standing order and money transfer services. Delay in processing or errors in filling necessary document can result in lower customer services levels and higher cost to clients. Similar effects arise when an institution cannot accurately forecast customer demand for cash say in its operations within an institution premise. An institution that integrate elements of demand forecasting, order processing and transit time-management maximize the beneficial effect of applying information technology through improved customer services.

Poor flow of information has negative effects on the health system, quality of healthcare and the saving of lives. The handling of information from medical practitioners to administrators and procurement officers whose responsibilities are to procure the right and appropriate drugs and other medical equipment and supplies, when poorly communicated can create shortage of thosemedical supplies and therefore delay the time it takes to service the patient effectively (Simchi-Levi, Kaminsky and Simchi-Levi, 2009). Poor order shipping: It is necessary to define which operations and which supplies will be needed to keep the health facility functional. In most cases the facilities received drugs from NGO and faith-based sectors in addition to their own procurement. But specific list of commodities to be procured are not agreed upon in defining the most required keeping patient treated in such case, shipping to those facilities will not be needed and this may increase the costs of holding those drugs and supplies.

Activities that return materials back to an organization are called reverse logistics alongside the physical flow of materials are the associated flow of information. This links all parts of the supply chain, passing information about products, customer demand, materials, movements, schedules, stock levels, availability, problems, costs, service levels, and so on. Coordinating the flow of information is always difficult, and logistics managers often describe themselves as processing information rather than moving goods (Christopher, 1996).

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order shipping: It is necessary to define which operations and which supplies will be needed to keep the health facility functional. In most cases the facilities received drugs from NGO and faith-based sectors in addition to their own procurement (Hall, 2016). But specific list of commodities to be procured are not agreed upon in defining the most required keeping patient treated in such case, shipping to those facilities will not be needed and this may increase the costs of holding those drugs and supplies.

Similarly,Kostagiolas and Lappa(2015) argue that in the Hellenic public health sector, we have to focus on added value activities using technology. As health information scientists, having the expertise, we should be prepared for advanced clinical applications and be able to access outcomes of information use, since this is the only way to provide secure access to data for those with a need to know (Benson, 2012). The decision process is a complex approach, especially in human diagnostic and therapeutic applications. Therefore, it is very important to set priorities in the sector of health information management into intelligence, bringing information, and promoting education and training into the organizations. We will also meet the joint actions planned for 2014 under the third EU Health program 2014–2020, giving us the opportunity to set a proposal for actions under thematic priority three, contributing to innovative, efficient, and sustainable health systems, in a timely manner (Drucker, 2008). Expert information professionals help in identifying opportunities in the Hellenic health community to show how important it is to have information on clinical praxis, cost analysis, quality care services, using accurate and actionable data to change all aspects of care delivery in and out of the hospital environmental. The current view should be optional rather than obligatory, until implementation is achieved and maintained.

According to Henderson (2015), International changes in hospital provision in establishing ICT market information economies are needed. E-health and health services based on e-health applications are broadly recognized as an essential element to improved scientific co-ordination and resource sharing. Healthcare executives are often asked to think of better ways to upgrade services, finance healthcare, and respond to customer priorities. Changes in healthcare demand innovative approaches and timely action are needed more than ever before. With healthcare being treated more as a community and political affair, management decisions are increasingly more complicated and demanding. With healthcare costs to raise, technology to expand, and resources to become more limited, there is mounting pressure to optimize the outcome resource link (Rousseau and Gunia, 2016). It is now well realized that in order to achieve international best practice in the primary healthcare sector, it is required to set the development methods on a fundamental integration of communications and information technologies with clinical practice.

The primary care health sector represents the base of the healthcare pyramid, which plays a crucial role in the delivery of preventive health care and in the triaging of patients needing more expensive specialist or hospital services. The foundation for these structures is a systematic ongoing measurement of what data is important in supporting the critical services of each department and then using that information in order to improve the overall operations of the enterprise (Blease, 2014). Each country must determine its own detailed approach to primary health care; as such, systems cannot simply be transplanted from the different circumstances of other nations. The maintenance of a complete and comprehensive patient record will enable, in practice, the collection and storage of nearly all of the information necessary for it to function effectively.

General practice staff has to be guided and assisted for adopting written protocols for the creation and maintenance of clinical records. Additionally, required access is needed for systematic training programs to cover records management strategies and standards should specify the required search access which record systems must permit. Information technology can be used for denoting knowledge imparted and the process of informing as a by-product of care delivery, and documenting of all patient information needed to support coding, clinical trials, and evidence-based research. All of the patient data can be represented in a semantic manner, building and using a medical ontology for knowledge management and cooperative work in a health care network. Any NHS needs to share information extensively in order to meet its aspiration (Vaughan et al. 2014). The need to define the main national health problems is obvious, but it is not easy to ensure that they are tackled in preference to other easier or more attractive alternatives. Patterns of health care in developed countries are usually the result of a process of evaluation.

There is need of a greater innovation in health and social care in order to provide better integrated-based information systems. Decision analysis has been increasing in recent years, and taxonomy for decision models could be developed by keeping a record of any NHS needs, in order to share information extensively to ensure access to health intelligence.

Conclusion

This chapter reviewed the literature review on the factors influencing service delivery with respect to various sectors. The literature puts into focus that number of factors may influence service delivery but, the need to focus on the procurement aspects for any service provider if it is to be effective and efficient. The literature was guided by institutional and socio-economic theories. The institutional theory is the traditional approach that is used to examine elements of

the public procurement. Socio-economic theory on the other hand, looks at the compliance by integrating economic theory with theory from psychology and sociology to account for moral obligation and social influence as determinants of individuals' decision on compliance.

While the literature also took into consideration the legitimacy theory which postulates organizations to be responsible for disclosure of their practices to stakeholders, especially to the public to justify the existence within the boundaries of society. These theories are useful to the study of service delivery and especially, health provision. The empirical literature identifies several factors that influence service delivery within organisations. However, when it comes to the study of service delivery in the health sector, limited research exists that addresses the effect of logistics management on service delivery in health organisations, hence need for this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0. Introduction

In this chapter, the research methodology to be used in the study is described. The research design, population and sample are described. The instrument to be used to collect the data, including methods implemented to maintain validity and reliability of the instrument are also

described. Finally, the profile of the case organization (Kiboga General Hospital is also presented at the latter part of this chapter.

3.1. Research Design

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions (Mugenda and Mugenda, 2003). A descriptive survey design was used. A survey is used to collect original data for describing a population too large to study directly (Mouton, 1996). A survey obtains information from a sample of people by means of self-report, that is, the people respond to a series of questions posed by the researcher (Polit and Hungler, 1993). In this study the information was collected through self-administered questionnaires distributed personally to the subjects by the researcher.

A descriptive survey was selected because it provided an accurate portrayal or account of the characteristics, for example behavior, opinions, abilities, beliefs, and knowledge of a particular individual, situation or group. This design is chosen to meet the objectives of the study, namely to determine the knowledge and views of the top management officials of Kiboga Hospital in Kiboga District and their staff with regard to change and its effects on Kiboga Hospital.

The study used both quantitative and qualitative research approaches in order to better understand relationship between variables in the research problem. Patton (1990) recommended the use of both quantitative and qualitative research designs was recommended. The quantitative approach was through questionnaire while qualitative approach was through use of interview guide which allowed the researcher to collect information for understating characteristics of respondents in situations and helped to uncover rationale for their decisions.

3.2. Study Population

This is the entire number of the members or elements in which the researcher is interested in getting data. In other words, it implies a set of all possible causes of interest in a given research activity. Target population consists of the people who wish to describe using our sample. According to Burns and Grove (1993), a population is defined as all elements (individuals, objects and events) that meet the sample criteria for inclusion in a study. The study population of this study consisted of all Staff and Management in the Kiboga Hospital

The target population of the study consisted of staff from the Finance, Administration Unit, Records Unit, Stores Unit and Pharmacy. Kiboga Hospital has a total number of 124 employees all together (Kiboga Hospital Human Resource 1st Quarter Report, 2017).

3.3. Sample size and selection

Sample size refers to the selected members from the entire population for use in the study. It is a sub group of observation from a large population in order to make inferences about the characteristics of the large population. In this study, using Morgan's table, a sample size of 92 respondents were considered adequate for the study.

3.4. Sampling techniques

Sampling is a key component of any investigation and involves several considerations. The aim of most investigations is to obtain information about a population. A census or sample of the population is taken for analysis.

The sampling techniques used for this study were purposive and convenience sampling techniques. Purposive samplingtechnique was used to select medical officer (specialist) respondents and medical officers general who acquire and manage stock at the hospital. This is

because these were regarded as the respondents with the required information for this specific research.

3.5. Area of study

The study was carried out from Kiboga Hospital. The hospital is located on the Kampala – Hoima road, in the central business district of the town of Kiboga, approximately 77 kilometers (48 miles) southeast of Hoima Regional Hospital. This is about 121 kilometers (75 miles) northwest of Mulago National Referral Hospital. The coordinates of Kiboga General Hospital are:0°54'43.0"N, 31°46'35.0"E (Latitude:0.911937; Longitude:31.776378).

3.6. Methods of data collection

The study relied on both primary and secondary data. Primary data was collected with the use of questionnaires and secondary data was also obtained from external sources such as the internet, Journals of change and other documentations. The purpose of sourcing for secondary data helped in the formation of problems, literature review and construction of questionnaire.

Primary sources

Primary data refers to data collected by the researcher for a particular need as is encapsulated in the research objectives. The study was conducted using a descriptive survey that collected data from the case study. Self-administered questionnaires and informal interviews were the techniques to be used in gathering data. Primary data was collected using the following methods and tools;

Secondary Data

The researcher gathered data from the Kiboga Hospital files and unpublished articles. Data was also gathered from the websites, journals, books, newspapers, magazines of different institutions along with different related studies about change within the industry to supplement the research.

Data Collection Tools

A questionnaire was used as the main data collection instrument. A questionnaire is a printed self-report form designed to elicit information that can be obtained through the written responses of the respondents. The information obtained through a questionnaire is similar to that obtained by an interview, but the questions tend to have less depth (Burns and Grove, 1993). Data was collected with the aid of questionnaires to evaluate the management and staff knowledge and views regarding logistics management and how it affects service delivery in the hospital. The questionnaire was designed to meet the objectives of the study. It was adopted from previous works (Oballah et al., 2015 and Anichebe and Agu, 2013) but the researcher will design it to suit the objectives of the study in order to solicit answers that would meet the objectives.

Questionnaires were personally distributed by the researcher to top management officials and their staff to complete. The data was collected over a specific period. Before the questionnaires are administered, the researcher sought permission from the hospital and interviews a few staff of which the researcher derived the research topic and objectives. The researcher interviews some staff to know the activities of the hospital. From that, the questionnaires were designed for the respondents. The researcher first did a pre-test of the questionnaire to ensure that the objectives are being met. The purpose of the pre-test activity was to ensure that the questionnaires are meaningful, easily understood and appropriate for the main fieldwork. The activity enables the researcher to become more familiar with items of the questionnaires and

prepare them accurately for the main work. After corrections are made, the questionnaires were distributed to staff and management.

3.7. Data Management and Data Analysis

The data was processed the data (both primary and secondary) manually. The processing stage involved editing, classification, coding, transcription and tabulation. Sullivan (2001) opined that data analysis can be the most challenging and interesting aspect of research. It refers to deriving meaning from the data that has been collected in a study. Data analysis assumes many forms. Quantitative data analysis involves the use of statistical methods to assemble, classify, analyze and summarize the data to derive meaning. As indicated earlier, the researcher conducted field research and collected data from Kiboga Hospital using questionnaires. Afterthedata collection, data reduction was conducted to select, arrange, refine, focus and summarize the data for onward analysis. The data collected was transformed into a form appropriate for manipulation and analysis. The data gathered from the questionnaire was edited to ensure completeness, consistency and accuracy. Data collected was analyzed through the use of Statistical Package for Social Sciences (SPSS) software and Microsoft Excel. In analyzing the data, frequency and descriptive tables was used as analytical tools. Quantitative explanations were made of quantitative data to give meaning to them as well as explain their implications. From these, appropriate conclusions and recommendations were made from the findings of the research.

3.8. Reliability and Validity

Reliability and validity are the two most important quality control objects in research. The following are the explanation of validity and reliability in research.

3.8.1 Reliability

Reliability is an instrument which is used to describe the overall consistency of a measure. A measure is said to have a high reliability if it produces similar results under consistent conditions. The issue of reliability was ensured through the appropriate random sampling and a purposive sampling technique is another indication of reliability in this study. Also the study included supervisor's comments and advice on the effect of logistics management on the service delivery of organizations. And because items of the questionnaire had multiple responses on the Likert scale, the reliability of the instrument was established by calculating the Cronbach's alpha coefficient (Amin, 2005).

Cronbach's alpha coefficient; $\alpha = \frac{k}{(k-1)} \times \left[\frac{(SD^2 - \sum SD_i^2]}{SD^2}\right]$

Where:

k = number of items in the instrument (24)

SD = standard deviation of scores in the whole instrument

SD = standard deviation of scores on individual items

In order to test the reliability of the instruments in this study, internal consistency techniques were applied using Cronbach's Alpha. Human Resource Management Practices score had a Cronbach'sat least a coefficient of 0.7 must be obtained. The coefficient was calculated for this specific study and the results showed a coefficient value of 0.739. This means that the results were reliable for this study.

3.8.2 Validity

Validity refers to the degree to which study accurately reflect or assesses the specific concepts the researcher is attempting to measure (Fidel, 1993). The types of validity include internal validity which clearly indicates the principles of cause and effects in research, external validity which clearly focus on the effects of research that can be generalized. In this study internal validity was invariably applied to test the effect of logistics management on the service delivery of organizations. Validity was enhanced through the pilot study that was purposely undertaken to pre-test the research tools and methods before the study to be undertaken. Certainty was enhanced this study validity as interview and questionnaires were clearly checked, these techniques were constructed basing on the objectives of the study. In confirming the validity of the instrument, face and content validity was ensured. The instrument was applied to professionals in the area of Organizational Psychology for proper scrutiny and evaluation. Furthermore, since this research is not a statistical study and the aim is to sample widely, external validity was achieved by analytical generalization of comparing research evidence with the existing literature.

$$CVI = \frac{\text{Relevant items}}{\text{Total number of items}}$$

66/92= 0.717

According to Amin (2005) and Odiya (2009), a CVI of above 0.68 implies that the instruments are good for the research purpose. Thus, the researcher first calculated the validity of the questionnaire to see whether it would be valid to collect data. The results (0.717) therefore show that the results are reliable.

3.9. Ethical Consideration

Privacy and confidentiality are the major ethical considerations in any research study (Emory and Cooper, 1991). Caution was taken against source bias and errors in methodology, interpretation of results and their application to real world issues. The researcher got an introductory letter and a valid identification card from Faculty of Business Administration Management, Uganda Martyrs University. The letter introduced the researcher to the respondents in Kiboga Hospital.

After getting permission, the researcher with his assistant proceeded to administer the questionnaires. The questionnaires were delivered by hand. To guarantee confidentiality of information provided, envelops were attached to the questionnaires and participants were instructed to put completed questionnaires into envelops and seal them. This precaution was to ensure that the responses are privy only to the researcher. All the necessary protocols were observed and all the respondents wereappreciated for their participation in the study.

Other ethical considerations were taken into consideration throughout data collection.

First, the clear introduction and elaboration of the objectives of the study was given to every respondent before engaging him/her in the fieldwork.

Second, all research tools wereaccompanied with an introduction so that participants' identities are kept anonymous, to avoid any harm to respondents.

Thirdly, each selected respondent was informed that his/her response is voluntary and only those who provided verbal and written consent was taken part in the study.

Still, the study wasabided by the ethics of social research ranging from professional ethics to those concerning researcher-respondent relationship. In addition, all who assisted the researcher in one way or another were given due respect. Acknowledgment of other scholars' works wasmaintained throughout the research process.

3.10. Limitations of the study

The researcher was faced with time constraint to carry adequate research within required time. Since the research required a lot of data collection from the field, analyzing and processing of data was involved, this was difficult to compile. But the short time used by researcher was maximally used when the researcher employed both qualitative and quantitative techniques.

Human errors and biasness are other limiting factors of this study. Respondents may have exaggerated important information in order to give their organization a positive credit for fear of what seem invasions into the organization's privacy.

Language barrier was another limitation to this study. However, this was solved when the researcher explained to the respondents on how to answer the questionnaires.

The researcher faced lack of cooperation from some of the respondents, especially those who had considered the information un-confidential. The researcher assured the respondents of

confidentiality of their information and that it was used solely for academic purposes by presenting an introductory letter from Uganda Martyrs University.

Conclusion

The chapter has explained and justified the research methodology used during the data collection and data analysis of the study. The chapter also described how data analysis was conducted as well as how the requirements for reliability and validity of the research design were met. Ethical considerations and problems encountered in this research were also discussed in this chapter. The next chapter deals with analysis and discussion of research results.

CHAPTER FOUR

PRESENTATION OF DATA, ANALYSIS AND DISCUSSION OF THE FINDINGS

4.0. Introduction

The findings of the study are presented in this chapter. Necessary discussions of the findings are also made to establish understanding and show relationships among variables in relation to literature and the research objectives. The data gathered was analyzed descriptively and quantitatively to provide insight into the effect of logistics management on service delivery in organizations of Uganda.

The respondents in this research study were staff of Kiboga Hospital. Sixty-six (66) responses in all were gathered out of expected (92) questionnaires administered. This represented 71.7% response rate. The response rate is adequate to generalize the research findings regarding this research topic

4.1. Background information of the respondents in Kiboga Hospital

The study sought to determine the different demographic characteristics of respondents in order to determine their knowledge and understanding of questions posed to them in the questionnaire. Thus, this section represents the findings on bio-data of respondents within Kiboga Hospital this include; gender, age, education level and marital as presented in the tables below;

4.1.1 Gender of the respondents

The researcher sought to establish whether gender of the respondents influenced logistics management and service delivery. The field findings are presented below;

Table 1: Gender of respondents

Gender of respondents			
Gender		**Frequency**	**Percent**
Valid	Male	36	54.6
	Female	30	45.4
	Total	**66**	**100.0**

Source: Primarydata (2017)

Findings from table 1 above show that 36 (56.7%) were males and 30 (43.3%) were females which implies that the study was gender sensitive and more so inclusive gender criterion. Therefore, the researcher's observation showed that there was a fair representation and true reflection of the study population basing on the response rate on gender. This is because males are the ones who mostly engage in health related activities.

4.1.2 Age of the respondents

The study classified the respondents according to gender in order to equitably analyze the findings since sex is a big factor concerning the data collected regarding the needed information basing on the research objectives. The findings are presented in the figure below.

Table2 : Age of respondents

Table 2: Age of respondents			
Age		**Frequency (F)**	**Percent (P)**
Valid	Below 21 years	3	3.8

	21-30 years	9	12.9
	31-40 years	29	45.5
	41-50 years	17	26.5
	51 years and above	8	11.4
	Total	**66**	**100.0**

Source: Primary data (2017)

The findings in table 2 above show that majority of the respondents were aged 31-40 years (F= 29; P = 45.5%), followed by those between 41-50 years (F=17; P=26.5%), 12.9% (9 respondents) were aged between 21-30 years, 51 years and above were 11.4% (8 respondents) and the least were below 20 years of age with a percentage of 3.8% (3 respondents). Majority of the respondents were within the age group of 31-40 years. This shows that the respondents were experienced regarding their experience according to the researcher's observation.

4.1.3 Education level of respondents

The researcher also collected data in relations to the education attained by the respondents and findings are summarized in the table below.

Table3: Education level of respondents

Table 3:Education level of respondents			
		Frequency	**Percent**
Valid	Degree	35	53.0
	Diploma	20	30.3
	Secondary	6	9.1

	Others	5	7.6
	Total	**66**	**100.0**

Source: Primary data (2017)

Findings in table 3above show that majority of the respondents in this study being degree holders (F=35; P=53.0%), diploma (F=20; P=30.3%), secondary (F=6; P=9.1%) and others (F=5; P=7.6%). This implied that respondents had capacity to interpret and give the required information as per the tools of the study. Majority of the respondents (35) had a degree, this implies that they knew what they were answering with regards to study topic the effect of logistics management on service delivery in health Organization. Therefore, the respondents knew and understood what they were responding to in thus research.

4.1.4 Marital status of respondents

Findings on the marital status of the respondents were considered to find out whether the respondents are engaged and competent in their relevant status. The findings are presented in the table below.

Table4: Marital status of respondents

		Frequency	**Percent**
Valid	Single	23	34.1
	Married	35	53.0
	Divorced	5	8.3
	Separated	3	4.5
	Total	**66**	**100.0**

Source: Primary data (2017)

Table 4 indicates that, 53.0% (35 respondents) of all respondents were married, 34.1% (23 respondents) were single, 8.3% (5 respondents) were divorced and 4.5% (3 respondents) were separated. This gave an implication that respondents in Kiboga Hospital were responsible and mature enough to give reliable information.

4.2. FINDINGS OF THE STUDY

4.2.1 Transport Management and Service Delivery

The study sought to examine the effect of transport management on service delivery in organizations in Ugandausing the Likert scale levels of analysis and the interpretation were based on the on 1-Strongly agree, 2-Agree, 3-Not sure, 4-Disagree and 5-Strongly disagree. The survey finding is presented in the table below.

Table5: Descriptive statistics on transport management

Statements	**1**		**2**		**3**		**4**		**5**		***Mean***	***Std. Deviation***
	F	***%***	***F***	***%***	***F***	***%***	***f***	***%***	***f***	***%***		
A transport management system exists in the organizations	2	3.0%	4	6.1%	1	1.5%	43	65.2%	16	24.2%	4.02	.882
The location of the hospital hinders effective transportation of supplies	1	1.5%	2	2.3%	5	8%	32	48.0%	27	40.2%	4.33	.748
We drive contract compliance with a secure, single view to the contracted rates and carrier allocations plans	3	4.5%	2	3.0%	5	8%	29	42.6%	27	41.9%	4.25	.968

Our hospital centralizes and standardizes transportation rates across modes and geographies	7 10.6%	14 21.2%	2 3.0%	41 62.9%	2 2.3%	3.25	1.142
Management optimizes carrier mode based on preconfigured business rules and available services.	2 3.0%	5 7.6%	2 2.3%	31 47.7%	26 39.4%	4.13	.992
Our organization does vehicle load and route optimization	3 4.5%	2 2.3%	-	25 38.6%	36 54.5%	4.36	.959
Management considers transport costs and scheme simulation	1 1.5%	2 3.0%	5 8%	39 59.5%	18 28.0%	4.17	.722
We carry out freight payment and audit	1 1.5%	3 4.5%	5 8%	36 54.2%	21 31.8%	4.17	.786

Source: Primary data (2017)

The findings in the table above is analyzed below

4.2.1. A transport management system exists in the organization

From the findings in table 5 above the study revealed that transport management system exists in the organization (65.2%) of the respondents agreed, (24.2%) strongly agreed, (3.0%) strongly disagreed, (6.1%) disagreed and (1.5) were not sure. Majority of the respondents agreed, which implies that a transport management system exists in the organizationand service delivery in the hospital moves onsmoothly. This shows that there is efficient transportation of the requirements at the hospital. For instance, when and how to acquire the hospital inputs.

4.2.2. The location of the hospital hinders effective transportation of supplies

Of the respondents (40.2%) strongly agreed that the location of the hospital hinders effective transportation of supplies, (48.3%) agreed, (1.5%) strongly disagreed and (2.3%) disagreed and (8.0%) were not sure, the findings revealed that majority of the respondents agreed with the statement. This shows that poor location ofany organization hinders effective transportation of its supplies. Similarly, Krasovec (2014)argues that poor location that hinders effective transportation of supplies such as drugs, whereas good location enables effective flow of suppliers from manufacturer to the end customer. Most of the respondents observed thatit is sometimes-difficult to balance between getting the best location to access the suppliers as well as for people to access hospital services abilities to best effect, while still monitoring and supporting closely enough to ensure that the procurement and service delivery is done correctly and effectively. Still, effective location of the hospital requires proper planning and this leads to successful service delivery.

4.2.3. Contract compliance with a secure, single view to the contracted rates and carrier allocations plans.

The findings on this research question, findings showed of the respondents, (41.9%) strongly agreed, (42.6%) that the hospital drive contract compliance with a secure, single view to the contracted rates and carrier allocations plans, agreed, (4.5%) strongly disagreed and (3.0%) disagreed and (8.0%) were not sure. The findings were in agreement withLindelow (2013), who discovered that in most of organizations, drive contract compliance with a secure, single view to the contracted rates and carrier allocations plans.

4.2.4. The hospital centralizes and standardizes transportation rates across modes and geographies

Respondents were asked whether the hospital centralizes and standardizes transportation rates across modes and geographies the response was positive. Majority of the respondents62.9% agreed that the hospital centralizes and standardizes transportation rates across modes and geographies, 2.3% disagreed with the statement, 10.6% strongly disagreed, 21.2% disagreed and however 3.0% were not sure whether centralizes and standardizes transportation rates across modes and geographies. The findings show a clear indication that hospital centralizes and standardizes transportation rates across modes and geographies to enable smooth delivery of services to all stakeholders. The field findings reveal that use of the centralized and standardizes transportation rates across modes and geographies is critical to the success of any organization since it leads to short lead time at a lower cost.

4.2.5. Management optimizes carrier mode based on preconfigured business rules and available services.

On the statement whether management optimizes carrier mode based on preconfigured business rules and available services, the response was positive with a Mean of 4.13 andStandard deviation 0.992. Results showed various opinions where 39.4% of the respondents strongly agreed, 47.7% agreed, 3.0% strongly disagreed and 7.6% disagreed and 2.3% were not sure. The finding is in agreement with Nancollas (2009) who contends that as part of the overarching framework of health institutions, it is envisaged that carrier mode based on preconfigured business rules and available services is of great use for the success of any service institution. Therefore, from the findings,Kiboga hospital optimize carrier mode basing on the preconfigured business rules and available services.

4.2.6. Our organization does vehicle load and route optimization

From the field findings, it was revealed that 54.5% strongly agreed, 38.6% agreed, 4.5% strongly disagreed and 2.3% disagreed with the statement that that the organization does vehicle load and route optimization. Thus findings cited that majority of the respondents strongly agreed and this clearly it implies that the organization does vehicle load and route optimization. The findings are in line with Schroeder (2010) whosupplements to this study that organization despite the nature of business they deal do vehicle load and route optimization in order to satisfy customers by making goods available to customers at low cost. Consequently, Lule, Ramana and Nandi (2015) argues that it is not a matter only just load and optimizing routes, it is all about planning basing on the nature of customers you are servicing or dealing with.

4.2.7. Management considers transport costs and scheme simulation

Majority of the respondents, 54.5% agreed and28.0% of the respondents strongly agreed that management considers transport costs and scheme simulation. However, of the respondents 1.5% strongly disagreed and 3.0% disagreed and yet 8.0% were not satisfied. Therefore, findingsreveal that majority of the respondents agreed putting a total figure at 72.5. The implication of this statement showed that Management considers transport costs and scheme simulation. In the current scenario of increasing health care costs, systems inventory must be optimized without sacrificing the level of service provided. Good transport management is essential to the successful operation of any health care organization, for a number of reasons. One of the most important is the proportion of the organizations' budget that represents money spent for inventory. Although the amounts and dollar values of the inventories carried by different types of health care providers vary widely, in a typical hospital's budget 25 to 30 percent goes for medical supplies and their handling. In a study done by Murray and Pearson (2006) in Namibia,

it was demonstrated that transport for emergency cases comes at a higher cost for people living in rural and largely marginalized areas. Very often, patients get too exhausted or die while waiting for Ambulances, which take over three hours on average to report at the scene after a callout. On the national scene, health care supplies constitute 8 to 9 percent of health care expenditures. According to Burns (2002), of supply costs, 15 to 23 percent is for pharmacy, 30 to 50 percent is for medical-surgical supplies, and 11 to 24 percent is for equipment. Clearly, medical supplies require significant attention in health care budgeting. Because the transport of medical supplies may comprise a significant portion of a health care organization's total assets, reducing its inventories significantly raises its ROI, and hence its position in the financial markets. Health care managers must be able to manage the transport of medical supplies effectively.

4.2.8. The organization carries out freight payment and audit

On whether the hospital carries out freight payment and audit, majority agreed with a meanof 4.17 and a standard deviation of 0.786. More to that majority of the respondents agreed with 61.4%, strongly agreed 31.8%, and 7.6% strongly disagreed, 6.1% disagreed and 1.5% were not sure whether the organization carries out freight payment and audit. It is evident that transport management greatly affects service delivery of organizations in Uganda. However, one of the respondents argues "this hospital has strong transport management teams at the top level but lack the commensurate strength at the supervisory level leading to a defect in the tactical aspect of strategy execution. Despite defects in supervision at the hospital, Broni*et al*. (2014) argues that proper transport management cannot only catch poor service delivery, but prevents it by identifying areas of concern and taking action in order to ensure effective and efficient service delivery.

4.2.9 Pearson correlations on transport management and service delivery within Kiboga Hospital.

The researcher sought to establish the relationship that exists between transport management and service delivery and below is the finding;

Table6:Correlations on the effect of transport management and service delivery

		Transport Management	**Service Delivery**
Transport Management	Pearson Correlation	1	.946**
	Sig. (2-tailed)		.000
	N	66	66
Service Delivery	Pearson Correlation	.946**	1
	Sig. (2-tailed)	.000	
	N	66	66
**** Correlation is significant at the 0.05 level (2-tailed).**			

Source: Primary data (2017)

From the table 6 above, it was seen that there is a very strong relationship (r=0.*946*) and (sig. =0.05) between transport management and service delivery. Since the correlation coefficient is above 0.05, this implies that a unit improvement on service deliveryis influenced by an improvement on the transport management. This therefore the management should handle transport with care since it can have a negative effect if the intended intension is not brought out clearly.

4.2.10. The regression model summary on transport management and service delivery

The study sought to determine the extent to which transport management influences service delivery in healthorganizations. Regressions analysis was done to establish the values, F-Values and Beta-values as indicated in the tables below;

Table7: Model Summary on the effect of transport management andservice delivery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.895	.894	.313

The model summary was presented to show the contribution of transport management on service delivery in the hospital; Regressions analysis was done to establish the values, F-Value and Beta-values as indicated in the table above. The results show an adjusted R-Square value of 0.894 meaning that transport management contributes 89.4% on service delivery.Therefore, management needs to handle transport management with care in order to improve on the service delivery at the health organization.

4.2.11 Value showing transport management and service delivery

Below are the results showing the confirmation on significant levels;

Table8 : On the effect of transport management and service delivery

Model		**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
1	Regression	108.214	1	108.214	1106.149	.005[b]
	Residual	12.718	64	.098		

	Total	120.932	65			

To confirm the relationship another test was carried using a regression analysis which also found out that there is no relationship between transport management and service delivery *(sig 0.05)* and the *F- value of* 1106.149 which is high but significant to $r=.946^{**}$ since the significance value is greater than 0.05. This confirms that there is a strong relationship between transport management and service delivery;however, the residual values are very high at 1106.149 as compared to regression value which shows many errors hence a need for decision makers to provide allowance for the inconsistencies. The finding was in agreement with Krasovec (2014) who observed thattransport management is important for people to use healthcare services, especially services requiring a referral. Key obstacles for assessing healthcare service are healthcare charges, long distances to facilities, inadequate and unaffordable transport systems, poor quality of care, and poor governance and accountability mechanisms. Problems with transport also affect the ability of staff to deliver health services. If there is improvement in transport management especially the ambulance services for the isolated communities by their remoteness, or as a consequence of social or economic factors (Broni, *et al*., 2014) proper transport management will solve the problem of in accessible, affordable and timely delivery of both the patients and drugs to the hospital which will improve on treatment, reduced mortality for some health problems such as ischemic heart disease which need immediate attention in case of referral.

4.2.12; Coefficients of valuations on between transport management and service delivery

Below are the results showing the confirmation on significant levels;

Table9: Coefficients on the effect of transport management and service delivery

Model		Un-standardized Coefficients		Standardized Coefficients	*t*	*Sig.*
		B	**Std. Error**	**Beta**		
1	(Constant)	.159	.127		1.249	.214
	Transport management	1.030	.031	.946	33.259	.000

- **Dependent Variable: Service delivery**

The coefficient analysis was carried out on transport management and high Service delivery and the study revealed the standardized Beta coefficients of b-value= 0.946 basing on the equation Y= βX + C, where Y = high service delivery (Dependent variable), X= transport management **(**independent variable), β beta = 0.177 and C is the constant. Therefore, the equation is Service delivery = 0. 946 Transport management + Constant. The coefficient also confirms a very strong relationship between transport management and Service delivery and beta-value showing that a unit change in Service delivery will lead to 0. 946 on service delivery.

4.3. Inventory management and service delivery

Inventory management systems obtain and move supplies and equipment to places where they are needed in a timely manner and at an optimum cost. Supplies and equipment usually cannot go directly from their source to the end user. They frequently must be held in the warehouse at some points along the way. In view of this warehouse of supplies maintained and inventory of supplies and equipment are held at all levels in Kiboga Hospital. Respondents were also asked about inventory management within Kiboga Hospital. Below were the results on the inventory

management using the 5 point Likert scale (1=Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree).

Table10: Descriptive statistics on inventory management

Statements	**1**		**2**		**3**		**4**		**5**		***Mean***	***Std. Deviation***
	f	***%***	***f***	***%***	***F***	***%***	***F***	***%***	***f***	***%***		
Our organization has a well-developed and effective inventory management strategy	5	7.6%	4	6.1%	1	1.5%	35	53.0%	21	31.8%	3.95	1.125
Stores manager determines optimal inventory levels	6	9.1%	5	7.6%	2	2.3%	30	45.5%	23	35.6%	3.91	1.226
Our organization has forecasting and demand management tools	2	3.0%	3	4.5%	5	8%	43	64.4%	18	27.3%	4.08	.856
Inventory planning and replenishment systems exist in the organization	2	2.3%	3	5.3%	1	1.5%	41	62.9%	18	28.0%	4.09	.842
Our inventory management system manages, measures and reports inventory accurately	3	3.8%	3	5.3%	2	2.3%	2	30.3%	38	58.3%	4.34	1.025
The organization has well organized and labeled locations for storing specific items	4	3.8%	2	2.3%	5	8%	50	75.3%	7	10.6%	3.94	.739

Orders are checked for completeness and inventory deliveries	4 6.1%	2 3.0%	1 2.3%	37 56.1%	22 32.6%	4.06	1.010
Stock checks are carried out to detect expired drugs and inventory discrepancies	3 3.8%	5 7.6%	1 1.5%	25 37.9%	32 49.2%	4.21	1.056

Source: Primary data (2017)

4.3.2. Our organization has a well-developed and effective inventory management strategy

From the findingsin table 10 above, 31.8% of the respondents strongly agreed, 53.0% agreed, 7.6% strongly disagreed and 6.1% disagreed and 1.5%of the respondents were not sure. Majority of the respondents 45.5% agreed that the organization has a well-developed and effective inventory management strategy35.6% of the respondents strongly agreed, 9.1% strongly disagreed and 7.6% disagreed while 2.3% were not sure. This means Kiboga Hospital has a well-developed and effective inventory management strategy. Similarly, Rousseau and Gunia(2016) found out that an organization with a well-developed and effective inventory management strategy has good service delivery.

4.3.2. Stores manager determines optimal inventory levels

From the findings, the researcher found out that45.5%of the respondents agreed, (35.6%) strongly agreed, 9.1.0% strongly disagreed and 7.6% disagreed and of the respondents 2.3% were not sure, since majority of the respondents agreed with the statement, it means that there was an indication that stores the manager determines optimal inventory levels in order to avoid scarcity. This is in line withOgbo. *et al.* (2014) with it is crucial to for the store manager to determine and monitor the optimal inventory levels. Thus, stores manager should determine optimal inventory levels despite the size and nature of organization.

4.3.3The organization has forecasting and demand management tools

As regards to the research theorganization has forecasting and demand management tools 64.4%, of the respondents agreed 27.3% strongly agreed, 3.0% strongly disagreed and 4.5% disagreed and 8% were not sure, mean 4.08 and standard deviation 0.856, since majority of the respondents agreed with the statement, it means that there was an indication that Kiboga Hospital has forecasting and demand management tools. Thus, organizations have forecasting and demand management tools to enable them manage customer demand.

4.3.4. Inventory planning and replenishment systems exist in the organization

It was observed that58.3% of the respondents strongly agreed and 30.3% agreed 2.3% not sure 5.3% disagreed, 3.8% strongly disagreed this implies that inventory planning and replenishment systems exist in the organization in the Kiboga Hospital. This means that inventory planning and replenishment enables management to focus on maintaining stock at required levels so that not to run out of stock. Similar conclusion was made by Khalid (2012).

4.3.5 Our inventory management system manages, measures and reports inventory accurately

On this particular statement stated, 58.3%strongly agreed and30.3%agreed yet 3.8% disagreed. 5.3% strongly disagreed. Of the respondents 2.3% were not sure whether the inventory management system manages, measures and reports inventory accurately. This means that Kiboga Hospital has inventory management system which is used to manage and measure, and report inventory accurately. Inventory management systems obtain and move supplies and equipment to places where they are needed in a timely manner and at an optimum cost. Supplies and equipment usually cannot go directly from their source to the end user. They frequently must be held in the warehouse at some points along the way. In view of this warehouse of supplies

maintained and inventory of supplies and equipment are held at all levels in the Ghana Health Service according to Osei, (2015).

4.3.6. The organization has well organized and labeled locations for storing specific items

From the findings on whether the organization has well organized and labeled locations for storing specific items, of the respondents 49.2% strongly agreed, 37.9% agreed, 7.6% disagreed, and 3.8% strongly disagreed with the statement. However, 1.5%of the respondents were not sure. It was also established that the management had put in place mechanisms for mitigation of critical risks that may result from fraud. One of the respondents argued that drugs are organized and labeled according to their usage. These results are a clear indication that there are organized and labeled locations for storing specific items and it affects the way service is delivered.

4.3.6. Orders are checked for completeness and inventory deliveries

From the table above 13, it was observed that of the respondents 56.1% agreed and 32.6% strongly agreed that orders are checked for completeness and inventory deliveries, also6.1% strongly disagreed, 3.0 disagreed and 2.3 % were not surewhether orders checked for completeness and inventory deliveries has any effect on the organization. The findingsindicate that if orders are poorly selected and listed it increases the costs of holding those orders supplies and increase an unnecessary waiting time for essential supplies that are needed by the target population whereas, poor order sorting occur when the medical supplies and drugs sorted are not arranged in sequence or by appropriate prescription pattern to remedy prevailing health condition in provide effective healthcare operations. Ordering cost also greatly influences the increase in the lead time in the public healthcare system. The size and frequency of orders is affected by how much lead time is required before a delivery can be made.

4.3.7. Stock checks are carried out to detect expired drugs and inventory discrepancies

Stock checks are carried out to detect expired drugs and inventory discrepancies, in this from the findings majority of the respondents 49.2%strongly agreed, 37.9% agreed, 7.6% disagreed, 3.8% strongly disagreed and 1.5 % were not sure with the statement. This means that stock checks are carried out to detect expired drugs and inventory discrepancies. This was further explained by Roundy (2015) and Oballah et al. (2015) who contend that inventory investment and inventory records accuracy have a positive influence on organizational service delivery since in a way that it helps in detecting expiry drugs and inventory discrepancies. According to the researcher, there is significant relationship between good inventory management and organizational effectiveness. Inventory management has a significant effect on organizational productivity. The study concluded that Inventory Management is very vital to the success and growth of organizations.

4.3.8. Pearson correlations on inventory management and service delivery within Kiboga Hospital.

The researcher sought to establish the relationship that exists between inventory management and service delivery and the findings are presented in the table below.

Table11 : Correlations on inventory management and service delivery

		Inventory management	**Service Delivery**
Inventory management	Pearson Correlation	1	.861**
	Sig. (2-tailed)		.000
	N	66	66
Service delivery	Pearson Correlation	.861**	1

	Sig. (2-tailed)	.000	
	N	66	66
****. Correlation is significant at the 0.05 level (2-tailed).**			

Table 11 above show that there is a very strong positive relationship (r=0. *861***) and (sig. =0.05) between inventory management and service delivery. Since the correlation coefficient is above 0.05, it implies that a unit increase or improvement in inventory management leads to service delivery. More so an increase in service delivery is as a result of inventory management in Kiboga Hospital. This is further explained by Osei(2015). Inventory management systems help stakeholders of organizations to obtain and move supplies and equipment to places where they are needed in a timely manner and at an optimum cost. Supplies and equipment usually cannot go directly from their source to the end user. They frequently must be held in the warehouse at some points along the way. Piasecki(2011) indicated that adequate storage and inventory control is a challenge, many drugs expire before they can be used, or they are they reach the service delivery point, which might be a health facility, laboratory, or community health worker.

4.3.9 Model summary on inventory management and service delivery

The study sought to determine the extent to which inventory management and service delivery, regressions analysis was done to establish the values, F-Values and Beta-values as indicated in the tables below.

Table 12: Model summary on inventory management and service delivery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.861[a]	.741	.739	.430

Source: Primary data (2017)

The model summary was presented to show the contribution of inventory management on service delivery, regressions analysis was done to establish the values, *F-Values and Beta-values* as indicated in the table above. The results show an adjusted R-Square value of 0.739 in the model summary meaning that inventory management contributes 73.9% effects.

4.3.10 Inventory management and service delivery

Below are the results showing the confirmation on significant levels;

Table 13: Value on inventory management and service delivery

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	68.888	1	68.888	372.809	.000[b]
	Residual	24.021	64	.185		
	Total	**92.909**	**65**			

a. Dependent Variable: Service Delivery

b. Predictors: (Constant), Inventory Management

To confirm the relationship inventory management and service delivery another test was carried using a regression analysis which also found out that there is a very strong relationship between inventory management and service delivery *(sig 0.05)* and the *F- value of* 372.809which is high confirms the significant value of the relationship since the significance value is less than 0.05. This confirms that there is a very strong relationship between inventory management and service delivery, however the residual values is very high at 372.809 as compared to regression value which shows many errors hence a need for decision makers to provide allowance for the inconsistencies.

4.3.12 Coefficients of valuations on between inventory management and service delivery

Table 14: Coefficients of inventory management and service delivery

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	**(Constant)**	1.089	.160		6.811	.000
	Inventory management	.755	.039	.861	19.308	.000

a. Dependent Variable: Service delivery

Source; primary data (2017)

The coefficient analysis was carried out on inventory management and service delivery and the study revealed the standardized Beta coefficients of 0.861 basing on the equation $Y= \beta X + C$, where Y = Service delivery (Dependent variable), X= inventory management (independent

variable), β *beta* =0.861and C is the constant. Therefore, the equation is low service delivery = 0.0.861 inventory management + Constant. The coefficient also confirms the non-significant relationship between inventory management and beta-value showing that a unit change in inventory management will lead to .861 change on the service delivery.

4.4. Order processing and Service Delivery

The study sought to find out the effect of order processing and service delivery. The findings are presented in the table below according to their means and standard deviations for easy analysis and interpretation.

Table 15: Descriptive statistics on Order Processing

Statements	**1**		**2**		**3**		**4**		**5**		***Mean***	***Std. Deviation***
	f	***%***	***f***	***%***	***F***	***%***	***F***	***%***	***f***	***%***		
Management orders right quantity and quality of stock at least cost	2	3.0%	4	6.1%	1	1.5%	43	65.2%	16	24.2	4.02	.882
Our organization orders for quantity whenever it reaches order level	1	1.5%	2	2.3%	5	8%	32	48.0%	27	40.2	4.33	.748
Stores manager does stock taking regularly	3	4.5%	2	3.0%	5	8%	29	42.6%	27	41.9%	4.25	.968
Incomplete order forms are not accepted in this organization	7	10.6%	14	21.2%	2	3.0%	41	62.9%	2	2.3%	3.25	1.142
Confirmation of the order with the customer is always carried out	2	3.0%	5	7.6%	2	2.3%	31	47.7%	26	39.4%	4.13	.992

All filled out order forms are circulated internally	3 4.5%	2 2.3%	- 	25 38.6%	36 54.5%	4.36	.959
Organization allows customers know the order status	1 1.5%	2 3.0%	5 8%	39 59.5%	18 28.0%	4.17	.722
Customer feedback is allowed in this organization	1 1.5%	3 4.5%	5 8%	36 54.2%	21 31.8%	4.17	.786

Source: Primary data (2017)

4.4.1. Management orders right quantity and quality of stock at least cost

From the findings in table above the study revealed management orders right quantity and quality of stock at the least cost with 65.2% of the respondents agreeing, 24.2% strongly agreed. This shows that normally management orders the right quantity. However, 3.0% of the respondents strongly disagreed, 6.1% disagreed and 1.5% were not sure whether management orders right quantity and quality of stock at the least cost. Majority of the respondents agreed, which implied thatmanagement orders right quantity and quality of stock at least cost this implies that service delivery in the hospital moves on smoothly since management orders right quantity and quality of stock in the hospital. The study findings were in agreement with Plasecki (2001) who argued that during order processing, there must be Economic Order Quantity that point at which the combination of order costs and inventory costs are the least. Lysons and Gilling ham (2003), supplements that Economic Order Quantity as the optimal ordering quantity for an item of stock that minimizes cost.

4.4.2. The organization orders for quantity whenever it reaches order level

The findings indicated that respondents with40.2% strongly agreed, 48.2% agreed, 1.5% strongly disagreed and 2.3% disagreed and 8.0% were not sure. The findings revealed that majority of the

respondents agreed with the statement, therefore this shows a clear implication that the hospital orders for quantity whenever it reaches order level. The findings were in agreement with Krasovec(2014) who argues that argues that whenever stock reaches re-order level, the organization should make an order for quantity in order to keep the store at optimum level.

4.4.3. Stores manager does stock taking regularly

Thefindings showed that majority of respondents with 42.6% agreed and 41.9% of the respondents strongly agreed thatstores manager do stock taking regularly. However, of the respondents 4.5% strongly disagreed and 3.0% disagreed and 8.0% were not sure. This shows a clear implication that store manager is in charge of carrying out stock taking in an organization. According to the researcher it is clear that the organization carries out periodic stock taking to ensure smooth running of the hospital's operations. The findings were in agreement with Osei (2015), who contends that effective stock taking regularly increase and provide effective healthcare operations services.

4.4.4. Incomplete order forms are not accepted in this organization

On the statement incomplete order forms are not accepted in this organization the response was positive mean of 3.25 and standard deviation 1.142 and in a similar way majority of the respondents agreed with 62.9% response rate 2.3% disagreed with the statement, 10.6% strongly disagreed, 21.2% also disagreed and 3.0% were not sure. The findings show a clear indication that incomplete order forms are not accepted in this organization to enable smooth delivery of services to all stakeholders. Since in most cases incomplete orders leads to poor services and increases cost following up those orders in the process.

4.4.5. Confirmation of the order with the customer is always carried out

On the statement of whetherconfirmation of the order with the customer is always carried out, the response was positive with a mean 4.13 and standard deviation of 0.992. Results showed various opinions where 39.4% of the respondents strongly agreed, 47.7% agreed, 3.0% strongly disagreed and 7.6% disagreed and 2.3% were not sure whether there is confirmation of orders with the customer. This means that Kiboga hospital confirmation of the order with the customer is always carried out. This brings out efficiency which come up with the reduced cost in the process.

4.4.6. All filled out order forms are circulated internally

The findings revealed that 54.5% of the respondents strongly agreed thus the findings cited that majority of the respondents strongly agreed and this clearly implies that all filled out order forms are circulated internally. However, a standard deviation of the respondents 4.5% strongly disagreed and 2.3% disagreed with the statement showing that they werein variance with the statement though minimal which means that at times order forms are not circulated internally.

4.4.7. Organization allows customers know the order status

On the statement organization allows customers know the order status, it was found out that 28.0% of the respondents strongly agreed, 54.5% agreed. This indicates that the organization values its customers during order processing. However, 1.5% strongly disagreed and 3.0% disagreed and 8.0% were not satisfied. Therefore, the implication of this statement showed that organization allows customers know the order status.

4.4.8. Customer feedback is allowed in this organization

On whether the customer feedback is allowed in organization, majority of the respondentsagreed61.4% and strongly agreed 31.8%. This shows that the hospital is always ready to improve and also make customers part of the system. However, 7.6% strongly disagreed, 6.1% disagreed with the statement and 1.5% were not sure. This means that the hospital accepts customer feedback.

4.4.9; Pearson correlations on order processing and service delivery within Kiboga Hospital

The researcher sought to establish the relationship that exists between order processing and service delivery. The analysis is presented in the table.

Table 16: Correlations on the effect of order processing and service delivery

		Order processing	**Service Delivery**
Order Processing	Pearson Correlation	1	.946**
	Sig. (2-tailed)		.000
	N	66	66
Service Delivery	Pearson Correlation	.946**	1
	Sig. (2-tailed)	.000	
	N	66	66

**** Correlation is significant at the 0.05 level (2-tailed).**

Source: Primary data (2017)

Table 16 above reveals that there is a very strong relationship (r=0.*946***) and (sig. =0.05) between order processing and service delivery since the correlation coefficient is above 0.05, it implies that an improvement in order processing results into Service Delivery. This is in line with Lambert and Burduroglo (2014) who argue that is always done whenever an organization runs out of stock places an order with suppliers. For the supplies to reach the organization from suppliers there is need to follow a processing for effective delivery. Good order processing enables an organization to have effective and efficient service delivery since supplies reach in time.

However, poor order listing can also increase the lead time in the public healthcare. A rational listing of order leads to a better supply, lower costs and a more effective prescription and use of drugs in the health facilities. Orders that are poorly selected and listed increases the costs of holding those orders supplies and increase an unnecessary waiting time for essential supplies that are needed by the target population, poor order sorting occur when the medical supplies and drugs sorted are not arranged in sequence or by appropriate prescription pattern to remedy prevailing health condition in provide effective healthcare operations (Osei, 2015). In this case the organizational management needs to enhance the way order processing is carried since it has a strong relation with service delivery.

4.4.10. Model summary on order processing and service delivery

The study sought to determine the extent to which order processing influences service delivery. Regressions analysis was done to establish the values, F-Values and Beta-values as indicated in the tables below;

Table 17: Model Summary on the effect of Order Processing and Service Delivery

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.895	.894	.313
Source; Primary data (2017)				

The model summary was presented to show the contribution of order processing on service delivery in the hospital; Regressions analysis was done to establish the values, F-Values and Beta-values as indicated in the table above. The results show an adjusted R-Square value of 0.894 in the model summary meaning that order processing contributes 89.4% effects on high service delivery. The finding was further explained by Roundy (2015) and Oballah et al. (2015) who contend that order processing accuracy have a positive influence on organizational service delivery in a way that it helps in detecting expiry drugs and inventory discrepancies.Therefore management needs to put more emphasis on improving the order processing that the organization is using. This will improve on service delivery since clients will have an efficient and timely way of serving the clients.

4.4.11. Coefficients of valuations on between order processing and service delivery

The researcher sought to establish the relationship between order processing and service deliveryand the findings are presented in the table below.

Table 18 : Coefficients on the effect of order processing and service delivery

Model		Unstandardized Coefficients		Standardized Coefficients	*T*	*Sig.*
		B	**Std. Error**	**Beta**		
1	(Constant)	.159	.127		1.249	.214
	Order Processing	1.030	.031	.946	33.259	.000

- **Dependent Variable: Service delivery**

Source; primary data (2017)

The coefficient analysis was carried out on order processing and high Service delivery. The study revealed the standardized Beta coefficients of b-value= 0.946 The coefficient confirms a very strong relationship between order processing and Service delivery and beta-value showing that a unit change in service delivery whichwill lead to 0.946 on service delivery.

This is further explained by Osei (2015), good order processing systems help stakeholders of organizations to obtain and move supplies in a timely manner. Supplies and equipment usually cannot go directly from their source to the end user if the orders are not placed on time. This means that management needs to emphasize on the order processing since it has a significant effect on the service delivery. Poor handling of the order process may lead to delay in service delivery to the organization if it not well handled

4.5.0Information flow and service delivery

Respondents were also asked about information flow within Kiboga Hospital; and below were the results on the order processing. The responses were computed by making an aggregate of

responses given by respondents to the items and 5 point Likert scale (1=Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree), *w*hich sought to measure information flow which were categorized according to their means and standard deviations as follows;

Table 19: Descriptive statistics on Information flow

Statements	**1**		**2**		**3**		**4**		**5**		***Mean***	***Std. Deviation***
	f	***%***	***f***	***%***	***f***	***%***	***F***	***%***	***f***	***%***		
The communication channels established for the people report suspected improprieties	3	5.3%	4	6.1%	2	3.0%	24	36.4%	32	49.2%	4.18	1.104
Management takes timely and appropriate follow up action on communication received from patients or from any other sources	2	3.0%	3	5.3%	1	1.5%	39	59.8%	20	30.3%	4.09	.895
The communication channels across the organization enable people discharge their roles effectively	13	9.8%	5	3.8%	2	1.5%	39	59.8%	17	25.0%	4.33	.777
Procurement officers get information in time from medical practitioners	8	11.4%	5	7.6%	3	3.8%	17	25.0	35	52.3%	3.99	1.379
There are no cases of mismanaging of information		10.3%		8.8%		13%		50.6%		24.5%	3.80	.805
Information flow affects service delivery	3	3.8%	2	2.3%	1	1.5%	11	17.4%	49	75.0%	4.58	.934

Source: Primary data (2017)

The analysis of the findings in the table above are presented in the following.

4.5.1 The communication channels established for the people report suspected improprieties

According to the findings in table 19 above, the response was positive a mean of 4.18 and a standard deviation of 1.104. Further on the statement of whetherthere arecommunication channels established for the people to report suspected improprieties. According to the findings, of the respondents 49.2% strongly agreed, 36.4% agreed. Therefore, majority of the respondents were in agreement that there is established communication channels for the people to report suspected improprieties in order to improve on the service delivery. To this 3.0% not sure yet 6.1% disagreedand 5.3% strongly disagreed with the statement. Since majority of the respondents strongly agreed it implies that the communication channels established for the people report suspected improprieties on Kiboga Hospital.

4.5.2 The management takes timely and appropriate follow up action on communication received from patients or from any other sources.

Management takes timely and appropriate follow up action on communication received from patients or from any other sources. The researcher found out that 30.3% of the respondents strongly agreed and 59.8% agreed. This shows that management takes immediate feedback and avoids complaints since there is timely and appropriate follow up action on communication received from patients. However,of the respondents 3.0% strongly disagreed, 5.3% disagreed and 1.5% were not sure whether there timely and appropriate follow up action on communication received from patients. The fact that the majority of the respondents agreed with the statementclearly indicates thatmanagement in Kiboga hospital takes timely and appropriate follow up action on communication received from patients or from any other sources.

4.5.3; The communication channels across the organization enable people discharge their roles effectively.

From the findings, the communication channels across the organization enable people discharge their roles effectivelywhich shows that majority of the respondents 59.8% agreed while25.0% strongly agreed. 9.8% strongly disagreed and 3.8%disagreed, with the statement and 1.5% were not sure. This study reveals that majority of the respondents agreed which is a clear implication that the communication channels across the hospital enable people discharge their roles effectively. This is in line with Christopher (1996) who observed that in order to achieve international best practice in the healthcare sector; it is required to set the development methods on a fundamental integration of communications and information technologies with clinical practice. This has a reaching effect both on the pattern of medical practice and domiciliary care, as well as on patient outcomes. Poor flow of information has negative effects on the health system, quality of healthcare and the saving of lives. The handling of information from medical practitioners to administrators and procurement officers whose responsibilities are to procure the right and appropriate drugs and other medical equipment and supplies, when poorly communicated can create shortage of thosemedical supplies and therefore delay the time it takes to service the patient effectively (Simchi-Levi, 2009).

4.5.3; Procurement officers get information in time from medical practitioners

The study sought to find out whether procurement officers get information in time from medical practitioners. Of the respondents 52.3%strongly agreed and 25.0% agreed. This implies that procurement officers get information in time from medical practitioner. However, 11.4% strongly disagreed, 7.6% disagreed with the statement and 3.8%) were not sure. The finding was in line with Rızzo, House and Lırtzman, (2010)who argued that when employers respect the law

and treat employees in a fair and consistent manner, procurement officers get information in time from medical practitionersthe company's values as their own.

4.5.4There are no cases of mismanagement of information

On the statement that there are no cases of mismanaging of information, majority of the respondents (50.6%) agreed, 24.5% strongly agreed, 13% were sure, 8.8 disagreed and 10.3% strongly disagreed with the statement. This had a mean score of 3.80 and standard deviation of0.805. This implies that cases regarding mismanaging of information are minimal in KibogaHospital. Theflow of materials in an organizationis associated with a clear information management. Still, in support of this study, Christopher (1996), Information management links all parts of the supply chain, passing information about products, customer demand, materials, movements, schedules, stock levels, availability, problems, costs and service levels. Therefore, clear information is crucial for the success of any institution, therefore management need to constantly check on the way information id delivered to the intended audience or clients.

4.5.5; Information flow affects service delivery

Majority of the respondents 75.0% strongly agreed that information flow is appropriately done and it affects service delivery. This was aggregated with a mean score of 4.58 which means that information flow is appropriately done. The standard deviation of .934 means that errors in this study were minimal. According to Boundless (2016) the maintenance of personal networks and social relationships through information communication is a key factor in how people get work done. However, while informal communication is important to an organization, it also may have disadvantage especially when it takes form of a rumor mill spreading misinformation, thus being harmful and difficult to shut down because its sources cannot easily be identified by

managementthe fact that some of the respondents 3.8% strongly disagreed and 2.3 disagreed that information flow affects service delivery.

4.5.6. Pearson correlations on information flowand service delivery within Kiboga Hospital

The researcher sought to establish the relationship that exists between information flow and service delivery and below is the finding;

Table 20: Correlationson information flow and service delivery within Kiboga Hospital

		Information flow	**Service Delivery**
Information Flow	Pearson Correlation	1	.757**
	Sig. (2-tailed)		.000
	N	66	66
Service Delivery	Pearson Correlation	.757**	1
	Sig. (2-tailed)	.000	
	N	66	66
****. Correlation is significant at the 0.05 level (2-tailed)**			
Source; primary data (2017)			

Table 20 above reveals that there is a very strong positive relationship ($r=0.757^{**}$) and (sig. =0.05) between information flowand Service Delivery since the correlation coefficient is above 0.05, it implies that a unit increase or improvement in information flow results into service delivery. Thisis further explained by Johnson and Wood (1996) who argued that in every areas of service, order processing, demand forecasting and customer demand functions are interrelated

that require proper information flow. Thus better information flow allows all stakeholders to communicate well thus improving on service delivery in an organization.

Nonetheless, poor flow of information has negative effects on the health system, quality of healthcare and the saving of lives. The handling of information from medical practitioners to administrators and procurement officers whose responsibilities are to procure the right and appropriate drugs and other medical equipment and supplies, when poorly communicated can create shortage of those medical supplies and therefore delay the time it takes to service the patient effectively (Simchi, 2009).

4.5.7 Model summary on information flow and Service Delivery

The study sought to determine the effect ofinformation flow onservice delivery, regressions analysis was done to establish the values, F-Values and Beta-values as indicated in the tables below;

Table 21: Model summary on information flow

Table 22. Model Summary on Information flow				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757[a]	.573	.570	.630
a. Predictors: (Constant), Information flow				

The model summary was presented to show the contribution of information flow on Service delivery within the hospital; regressions analysis was done to establish the values, F-Values and Beta-values as indicated in the table above. The results show an adjusted R-Square value of 0.570 in the model summary meaning that information flow contributed 57.0% influences on service delivery. The finding show that among the study variables, information flow has the least

influence on Service delivery among the study variables. However, if well enhanced it can tremendously improve on the service delivery. This is in line with Christopher (1996) who observed that that in order to achieve international best practice in the healthcare sector, it is required to set the development methods on a fundamental integration of communications and information technologies with clinical practice. This has a reaching effect both on the pattern of medical practice as well as on patient outcomes. Poor flow of information has negative effects on the health system, quality of healthcare and the saving of lives. The handling of information from medical practitioners to administrators and procurement officers whose responsibilities are to procure the right supplies, when poorly communicated can create shortage of those medical supplies and therefore delay the time it takes to service the patient effectively (Simchi-Levi, 2009).

4.5.8 Coefficients of valuations on between information flow and poor service delivery

Table 22: Coefficients on Information flow

Model		**Un-standardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-.074	.312		-.237	.813
	Information flow	.937	.071	.757	13.205	.000
a. Dependent Variable: Service delivery						

The coefficient analysis was carried out on Information flow and service delivery and the study revealed the standardized Beta coefficients of 0.757 basing on the equation $Y= \beta X + C$, where Y

= service delivery (Dependent variable), X= Information flow (*independent variable*), *β beta* = 0.757 and C is the constant. Therefore, the equation is profitability = 0.757 Information flow + Constant. The coefficient also confirms the non-significant relationship between Information flow and service delivery and beta-value showing that a unit change in motivation techniques will lead *to* 0.757 on Service delivery. Theorganization should handle information flow with care since it can have a negative effect if the intended intension is not brought out clearly to the target audience (departments and clients). Christopher (1996), Information management links all parts of the supply chain, passing information about products, customer demand, materials, movements, schedules, stock levels, availability, problems, costs and service levels. Therefore, clear information management is crucial for the success of any institution

4.6 Service Delivery

Respondents were also asked about service delivery within Kiboga Hospital. Below were the results on the Service delivery. The responses were computed by making an aggregate of responses given by respondents to the items and 5 point Likert scale (1=Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree), *w*hich sought to measure service delivery which were categorized according to their means and standard deviations as follows

Table 23: Descriptive statistics on Service delivery

Statements	**1**		**2**		**3**		**4**		**5**		***Mean***	***Std. Deviation***
	f	***%***	***f***	***%***	***f***	***%***	***F***	***%***	***F***	***%***		
Stakeholders are satisfied with our service delivery	3 3.8%		3 5.3%		2 3.0%		18 27.3%		40 60.6%		4.36	1.035

Our health services are reliable (24 hour service and full competent Medical Staff)	-	-	-	34 50.8%	32 49.2%	4.49	.502
There is completeness in the organization's healthcare services	3 4.5%	2 2.3%	5 8%	40 60.2%	17 25.0%	4.06	.872
The organizations staff members are empathetic	5 3.8%	4 3.0%	1 8%	30 45.2%	26 40.0%	4.25	.919
Our healthcare services are affordable (payment)	2 2.3%	3 4.5%	1 1.5%	24 36.4%	36 55.3%	4.38	.904
Clients receive drugs in time	7 10.6%	10 14.4%	3 3.8%	30 46.2	17 25.0	3.61	1.294
The Physical appearance of our hospital is satisfying	4 6.1%	2 3.0%	1 1.5%	43 65.9%	16 23.5%	3.98	.961

Source: Primary data

4.6.1. Stakeholders are satisfied with our service delivery

The findings from table on this study question revealed that some estimated respondents with a On the statement that*Stakeholders are satisfied with our service delivery*," majority (60.6 %) strongly agreed, 27.3% agreed with the statement, 3.0% were not sure, 5.3% disagreed and 3.8% strongly disagreed with the statement.Therefore, the researcher concluded that the stakeholders are satisfied with the service delivery.

4.6.2. The health services are reliable (24-hour service and full competent Medical Staff)

On whether the health services are reliable that (24-hour service and full competent Medical Staff) the researchers found out that majority 50.8% of the respondents agreed and 49.2% strongly agreed

with the statement. All most 74.8% of the respondents agreed that most times, the expected standards of service delivery are met by employees. This was supported by a mean score of mean score of 4.49 and standard deviation of .502, which meant that the errors were minimal.Therefore,the health services are satisfied with the service delivery.

4.6.3. There is completeness in the organization's healthcare services

The researcher `found out that 67.4% of the respondent agreed, 25.0% strongly agreed 8% were not sure, 2.3% disagreed and 4.5% strongly disagreed with the statement that there is completeness in the organization's healthcare serviceswith a mean score = 4.06 and Standard deviation=.872 realized which meant that errors were minimal. This is in line with Lane (2013) who contends that that when a portion of the job is being handled by one person then he/she concentrates on executing that task without error there by cutting down the cost.

4.6.4. The organization's staff members are empathetic

The research findings show that majority of the respondents 49.2% agreed 43.2% strongly agreed that the organizations staff members are empathetic, 8% were not sure. However, 3.0% disagreed and 3.8% strongly disagreed. This was supported by a mean score = 4.25, with standard deviation .919 which meant that staff members are empathetic inKiboga Hospital.Therefore, the researcher concluded that the organization staffs are empathetic.

4.6.5. Our healthcare services are affordable (payment)

On whether the stated our healthcare services are affordable (payment), majority of the respondents ranging from 55.3% strongly agreed yet 36.4% agreed with the statement. However, 1.5% was not sure, 4.5% disagreed and 2.3% of the respondents strongly disagreed with the

statement. This had a mean score = 4.38 and standard deviation = .904 which meant most of the respondents strongly agreed with the statement.

4.6.6. Clients receive drugs in time

On the statement that was stated as Clients receive drugs in time majority 46.2% agreed, 25.0% strongly agreed, 3.8% were not sure, 14.4% disagreed and 10.6% strongly disagreed. This was supported by a mean score = 3.61, with standard deviation .1.294. It was evident according to the researcher that the staff values the customers and always serves according to their need on time. Thus, the outcome of this study recommends ways to improve healthcare delivery in the country, not only through training more healthcare professionals, or just improving economic conditions but also by efficient management of existing healthcare professionals on how `effectively manage clients.

4.6.7. Challenges of logistics management practices on Kiboga Hospital.

The last objective of the study was to determine the challenges of logistics management practices on Kiboga Hospital. In order to achieve this, questions on challenges of logistics management practices at Kiboga Hospital were posed to hospital staff respondents to determine their level of agreement. It was seen that the respondents agreed with most of the items used to determine the challenges of logistics management practices at Kiboga Hospital. It could be seen that delaysin delivery of drugs leading to insufficient inventories. Other challenges that were identified included bureaucratic process in procurement and loss of drugs through inventory shrinkages. This implies that Kiboga hospital is faced by some challenges in their logistics management practices including delays in delivery of drugs leading to insufficient inventories, bureaucratic process in procurement and loss of drugs through inventory shrinkages.

Conclusion

The findings of the study were presented in this chapter. Necessary discussions of the findings were also made to establish the understanding and show relationships among variables in relation to literature and the research objectives. The data gathered was analyzed descriptively and quantitatively to provide insight into the effect of logistics management on service delivery in organizations of Uganda.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The findings were summarized, concluded and recommendations presented in relation to the objectives and according to the research questions as indicated below; how transport management affects service delivery, how does inventory managementaffect service delivery; how does information flow affect service delivery and to what extent does order processing affect service delivery in Kiboga Hospital.

5.1 Summary of the general findings

In order to ensure achievement of the study objectives, the researcher found out that that 56.7% of the respondents were males and 43.3% were females. Of the respondents'majority 45.5%, were agedbetween 31-40 and the least 3.8% were below 20 years of age. The finding revealed that on average a 4.36 of the respondents contended that transport management has the created influence in the service delivery.

5.2. Findings on the specific objectives

5.2.1. The effect of transport management on service delivery in organizations

With regards to transport management it has a mean value of 4.36. Therefore, the findings on effect of transport management on service delivery in organizations reveal that there is a very strong relationship(r=0.*946***) and (sig. =0.05) between transport management and service delivery. Since the correlation coefficient is above 0.05 and with a mean value of 4.36 which

implies that a unit increase or improvement in transport management results into service delivery.

5.2.3. The effect of inventory management on service delivery in organizations

The findings in chapter four reveal that there is a very strong positive relationship (r=0. *861***) and (sig. =0.05) between inventory management andservice delivery with a mean value of 4.34. Since the correlation coefficient is above 0.05 and with the mean value of 4.34, it implies that a unit increase or improvement in inventory management leads to better service delivery. More so an increase in service delivery is not as a result of inventory management in Kiboga Hospital.

5.2.4. The effect of order processing on service delivery in health organization

The findings on the effect of order processing on service delivery in health organization reveal that there is a very strong relationship with (r=0.*946***) and (sig. =0.05) between Transport management and Service Delivery and this is supported by the mean value of 4.33. Since the correlation coefficient is above 0.05, it implies that a unit increase or improvement in transport management results into a better improvement on the service delivery.

5.2.5. The effect of information flow on service delivery in health organizations

The findings in chapter four above reveal that there is no significant relationship (r=0.757**) and (sig. =0.05) between information flow and service delivery. Since the correlation coefficient is slightly higher than 0.05 as compared to other study objectives and also has the mean value of 4.24, it implies that a unit increase or improvement in information flow does not in any way affect the service delivery.

5.3. Conclusions

5.3.1. Transport management and service delivery

The model summary was presented to show the contribution of transport management on service delivery in the health organization. The study discovered that organizations have transport management within their structure that affects service delivery. One of the respondents argued that the level at which a transport management is planned and implemented determines the way service is delivery right from accessing medical supplies from suppliers to the final consumer. Transport management is important for people to use healthcare services, especially services requiring a referral. Therefore, the study concludes that transport management affects service delivery in an organization.

5.3.2. Inventory management and service delivery

The study found out that inventory management has an effect on service delivery. These results are clear indication that there is inventory management in organizations and it affects the way organizations provide their services to clients. Inventory management systems help stakeholders of organizations to obtain and move supplies and equipment to places where they are needed in a timely manner and at an optimum cost. Supplies and equipment usually cannot go directly from their source to the end user. They frequently must be held in the warehouse at some points along the way. Thus, the study concludes that inventory management affects service delivery in an organization.

5.3.3. Order processing and service delivery

The study found out that there is a very strong relationship between Order processing and Service Delivery. A unit increase or improvement in order processing results into better and efficient service delivery. The organization needs to ensure that procedure for accessing supplies

from suppliers if well planned has an effective service delivery in organizations. Good order processing enables an organization to have effective and efficient service delivery since supplies reach in time. Nevertheless, poor order listing can also increase the lead time and ordering costs in the organization. A rational listing of order leads to a better supply, lower costs and a more effective prescription and use of drugs in the health facilities. Orders that are poorly selected and listed will increase the costs of holding those orders supplies and increase an unnecessary waiting time for essential supplies that are needed by the target population.

5.3.4 Information flow and service delivery

The study sought to establish the effect of information flow on service delivery in relation to the length of operation of the organization. The study found out that information flow has an effect on service delivery in organizations. Better information flow allows all stakeholders to communicate well and help in improving on service delivery in an organization. Though, poor flow of information has negative effects on the health system, quality of healthcare and the saving of lives. The handling of information from medical practitioners to administrators and procurement officers whose responsibilities are to procure the right and appropriate drugs and other medical equipment and supplies, when poorly communicated can create shortage of those medical supplies and therefore delay the time it takes to service the patient effectively.

5.4. Recommendations

According to the findings, the model summary was presented to show the contribution of transport management on service delivery in the hospital. Thus, the best combination of transport services should be employed to enable the hospital deliver better services to clients.

According to the findings, specialists should be employed to manage inventory as a way reducing risks of shortage of stock and use of expired medical supplies.

During the findings the element of order processing, departments should liaise with logistics and purchases departments so as to place and process orders effectively with the suppliers

In reference to information flow in the hospital employees should receive basic literacy training, inter-personal skills training, technical training, problem-solving training and diversity or sensitivity training. Each type of training it will target a different facet of an organization's overall culture and performance.

Generally, the findings of the research agree with existing literature that there is little practice of logistics management in organizations in Uganda. The organizations especially healthcare institutions specifically should make sure that there is an effective logistics management system in their firms as this will bring much benefit to them.

Finally, future research in this field should be carried out in respect of effective relationship building with suppliers and its effect on logistics management, as well as the use of integrated information systems in the logistics management of various inventories in Uganda.

5.5 Areas for further research

The further research can be carried out on;

- Procurement audit and investigation on service delivery
- Centralized purchasing and procurement efficiency in government entities

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APPENDICES

APPENDIX I: QUESTIONNAIRE

Dear Respondent,

A SELF-ADMINISTERED STRUCTURED QUESTIONNAIRE TO ASSESS THE EFFECT OF LOGISTICS MANAGEMENT ON SERVICE DELIVERY AT KIBOGA HOSPITAL.

My name is **Okia Innocent;** I am currently pursuing a Bachelors of Business Administration and Management degree (B-BAM), specializing in Procurement from Uganda Martyrs University. I am undertaking a research/ study on the topic: Logistics management and service delivery at Kiboga hospital.

This questionnaire therefore aims at analyzing and assessing the effect of logistics management on service delivery at Kiboga hospital. This survey is conducted for purely academic purposes as a result, the information generated is intended to help in improving service delivery. I would like to discuss with you your experience and opinions regarding logistics management and service delivery.

Please note that there is no right or wrong answer. All information received will be kept strictly confidentially and your name will not be indicated in the study results. Participation in this study is voluntary and you have to accept to participate or withdraw from the study at any stage.

SECTION A: GENERAL INFORMATION

1) Respondent's gender

a) Male ☐

b) Female ☐

2) Respondent's age group

a) Below 21years ☐

b) 21-30 years ☐

c) 31-40 years ☐

d) 41-50 years ☐

e) 51 and above ☐

3) Respondent's level of education?

a) Degree ☐

b) Diploma ☐

c) Secondary ☐

d) Any other, Specify……

4) Respondent's marital status

a) Single ☐

b) Married ☐

c) Divorced ☐

d) Separated ☐

5) What is your role at Kiboga Hospital?

……..

6) For how long have you worked for Kiboga Hospital?

……

SECTION B: TRANSPORT MANAGEMENT

(Please tick the answer that corresponds to your level of agreement or disagreement with each item: 1. Strongly disagree 2. Disagree 3. Not sure, 4. Agree and 5. Strongly Agree).

Statement	**1**	**2**	**3**	**4**	**5**
A transport management system exists in the organization					
The location of the hospital hinders effective transportation of supplies					
We drive contract compliance with a secure, single view to the contracted rates and carrier allocations plans					
Our hospital centralizes and standardizes transportation rates across modes and geographies					
Management optimizes carrier mode based on preconfigured business rules and available services.					
Our organization does vehicle load and route optimization					
Management considers transport costs and scheme simulation					
We carry out freight payment and audit					

In your opinion, briefly explain how transport management can affect service delivery.

……

……

SECTION C: INVENTORY MANAGEMENT

(Please tick the answer that corresponds to your level of agreement or disagreement with each item: 1. Strongly disagree 2. Disagree 3. Not sure, 4. Agree and 5. Strongly Agree).

Statement	1	2	3	4	5
Our organization has a well-developed and effective inventory management strategy					
Stores manager determines optimal inventory levels					
Our organization has forecasting and demand management tools					
Inventory planning and replenishment systems exist in the organization					
Our inventory management system manages, measures and reports inventory accurately					
The organization has well organized and labeled locations for storing specific items					
Orders are checked for completenessand inventory deliveries					
Stock checks are carried out to detect expired drugs and inventory discrepancies					

Briefly, explain how inventory management affects service delivery

……

……

SECTION D: ORDER PROCESSING

(Please tick the answer that corresponds to your level of agreement or disagreement with each item: 1. Strongly disagree 2. Disagree 3. Not sure, 4. Agree and 5. Strongly Agree)

Statement	1	2	3	4	5
Management orders right quantity and quality of stock at least cost					
Our organization orders for quantity whenever it reaches order level					

Stores manager does stock taking regularly					
Incomplete order forms are not accepted in this organization					
Confirmation of the order with the customer is always carried out					
All filled out order forms are circulated internally					
Organization allows customers know the order status					
Customer feedback is allowed in this organization					

In your opinion, briefly explain how order processing affects service delivery

……

……

SECTION E: INFORMATION FLOW

(Please tick the answer that corresponds to your level of agreement or disagreement with each item: 1. Strongly disagree 2. Disagree 3. Not sure, 4. Agree and 5. Strongly Agree)

Statement	**1**	**2**	**3**	**4**	**5**
The communication channels established for the people report suspected improprieties					
Management takes timely and appropriate follow up action on communication received from patients or from any other sources					
The communication channels across the organization enable people discharge their roles effectively					
Procurement officers get information in time from medical practitioners					

There aren't cases of mismanaging of information					

In your opinion, briefly explain how information flow affects service delivery

……

……....

SECTION E: SERVICE DELIVERY

(Please tick the answer that corresponds to your level of agreement or disagreement with each item: 1. being very dissatisfied; 2. Dissatisfied; 3. Not sure; 4. Satisfied; 5. Very satisfied)

Statement	**1**	**2**	**3**	**4**	**5**
Stakeholders are satisfied with our service delivery					
Our health services are reliable (24-hour service and full competent Medical Staff)					
There is completeness in the organization's healthcare services					
The organizations staff members are empathetic					
Our healthcare services are affordable (payment)					
Clients receive drugs in time					
The Physical appearance of our hospital is satisfying					

Briefly, provide any suggestions for quality service delivery at Kiboga Hospital

……

……

In your opinion, suggest any challenges faced in logistics management in relation to service delivery.

……

……

Thank you!

APPENDIX III: MORGAN AND KREJCIE TABLE

TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION

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

“N” is population size

“S” is sample size.