

**SERVICE OUTSOURCING AND SUPPLY CHAIN PERFORMANCE
OF PRIVATE HOSPITALS IN NAIROBI, KENYA**

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**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE
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DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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DEDICATION

I wish to dedicate this project to my husband, my siblings and to my entire family for encouraging me to follow this path of study.

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LIST OF ABBREVIATIONS AND ACRONYMS

GDP	Gross Domestic Product
HR	Human Resource
ICT	Information Communication Technology
IT	Information Technology
NHIF	National Hospital Insurance Fund
PPB	Pharmacy and Poisons Control Board
SC	Supply Chain
SCM	Supply Chain Management
SCOR	Supply Chain Operations Reference
TCE	Transaction Cost Economics

ABSTRACT

It has become challenging to conduct business in the contemporary world, given the dynamic global environment. Based on numerous indicators of increased uncertainties in the future, organizations are becoming weary of the traditional ways of doing business. Most companies have come up with strategies to cope up with these challenges in order for them to be competitive and relevant in the market. One of the strategies is to concentrate on the core competencies and to entrust most of the activities to outside suppliers or to outsource them. Supply chain performance improvement is an endless process that needs an analytical measurement system. This study had two objectives; to determine the services that are commonly outsourced by private hospitals in Nairobi, Kenya, and to determine the effect of outsourcing on supply chain performance in private hospitals in Nairobi, Kenya. This study adopted a descriptive research design which was used to explain the relationship between the outsourcing and supply chain performance of private hospitals in Nairobi, Kenya. The study established that ICT services, logistics management services, cleaning services, and security services were the most commonly outsourced services. The findings of the study also revealed that there was a positive relationship between service outsourcing and supply chain performance. The study recommended that companies should carefully review their outsourcing strategies to use service providers in the delivery of certain services that are not significant in operation. The limitation of this study was that hospitals refused to participate in the study mentioning that the firm's policy did not allow the dissemination of any proprietary information. This study recommended that a similar study should be done in the future, but on other industries to establish whether results and findings will vary.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The world has increasingly become complex, uncertain and competitive. It has become challenging to conduct business in the contemporary world, given the dynamic global environment. The ever-evolving business landscape has become a breeding ground for weighty interruptions, which cause business stability threats. Based on numerous indicators of increased uncertainties in the future, organizations are becoming weary of the traditional ways of doing business. Most companies have come up with strategies to cope up with these challenges in order for them to be competitive and relevant in the market. One of the strategies is to concentrate on the core competencies and to entrust most of the activities to outside suppliers or to outsource them.

Outsourcing is a process of replacing an internally provided activity by contracting it out to external agents. It involves reassigning responsibility of carrying out an activity formerly done internally to an outsourcer for an agreed charge (Norek & Pohlen, 2001). Profits are the major reason of existence of firms in operation. In order to gain profits, firms put in place various strategies geared towards meeting this goal. Outsourcing is a strategy that is commonly used for the purpose of improving the bottom line of an organization (Bearden, Ingram & Lafarge, 2007). Another key benefit associated with outsourcing is that it enables firms to focus on their core business. By subcontracting non-core activities, the firm's management gets to focus more on key activities. In addition, it also leads to increased resource allotment to those activities that the firm does

best. Damme and Amstel (1996) affirm that resources need to be directed towards the practices that yield more returns.

Throughout the world, hospitals and other healthcare amenities are devoted to providing advanced and compassionate patient care, which meets high standards of quality in an economical manner. The need to retain the largest market share in the midst of much competition has driven much of the strategic thinking adopted by these hospitals. By leveraging on outsourcing certain activities, companies are redefining the business model to maximize value from their business processes (Ichoho, 2013).

1.1.1 Outsourcing

Outsourcing is defined as the transfer of internal processes and decisions of a firm to external parties (Chase, Jacob, & Aquilano, 2004). Corbett, Blackburn and Van Wassenhove (1999) define outsourcing as a management strategy where a business unit or an organization devolves its non-core functions to an efficient and specialized service provider. The basic principle of outsourcing is that an expert organization can execute a specific service more efficiently than the outsourcing firm because it has an inherent advantage in providing and delivering the service.

The reasons for outsourcing vary, but most importantly, it enables firms to concentrate all its efforts on more important areas, which allows it to create competitive advantage while reducing costs (Chase, Jacob & Aquilano, 2004). Other reasons include; improving quality, lack of internal skills, expertise or capacity, reduced time to market, technological changes and advancement, to preserve organizational capital where they are most effective and to decrease resources where they are least effective.

Outsourcing as a function cuts across all business processes including product design, manufacturing, information technology, customer care, catering, procurement, and many more services. In the health sector, non-clinical services are usually the most outsourced services. According to (Young, 2005), the features of the labor market such as the competency of the workforce and their availability, the relationship between industries, and the understanding of core practices pertaining to healthcare, form the basis of knowing what should be subcontracted. Shinkman (2000) outlines that the functions which are most contracted out in the healthcare sector are information technology at 29%, followed by finance at 20% and lastly support services at 19%. A study carried out in Greece revealed that security services, cleaning services, legal assistance and equipment maintenance were the services frequently outsourced in the public health sector (Moschuris & Kondylis, 2006). Laundry, laboratory services and food were the least outsourced activities.

1.1.2 Supply Chain Performance

A supply chain encompasses all parties (suppliers, manufacturers, transporters, warehouses, retailers and end customers) involved in fulfilling a customer's request (Meindl & Chopra, 2013). On the other hand, the healthcare supply chain consists of four elements including manufacturers, purchasers, providers, and patients (Medina & Santana, 2014). Performance measurement involves the quantification of a company's efficiency and effectiveness with regard to actions (Neely, Gregory & Platts, 2005). Performance measurement mainly provides valuable information which permits organizations to enhance the satisfaction of customer requirements and to meet the

organization's strategic goals (Felix, Chan & Qi, 2003). Performance measurement of the entire chain is key because it allows for trailing of efficiency and effectiveness failures. In addition, it provides insight to decision-makers in improving the supply chain (Aramyan et al., 2007).

Supply chain performance cuts across both functional lines and company boundaries. Kurien and Qureshi (2011) define supply chain performance measurement as the set of techniques used to gauge the overall competency and ability of the supply chain. According to Jian, C. et al. (2008), measuring of performance is a continuous process that requires a systematic system of measurement. Neely, Gregory and Platts (2005) highlight that a performance measurement system consists of three levels which are (1) individual appraisal, (2) appraisals of individual groups (3) the association between the measurement system and its working environment.

According to Menges et al. (2011), organizational performance is highly influenced by macro factors like SC management and corporate SC. It is on this basis that firms have shifted from measuring organizational performance in general to procurement and SC performance in order to improve the bottom line performance. There exist several techniques that have been established to test the performance of SC. However, an effective measurement should not be concentrated on one aspect such as cost since this can give a wrong impression of the entire performance of SC (Cai et al. 2010). Efficiency and effectiveness of the supply chain is measured using general performance indicators such as time, quality, flexibility and cost (Kumar, Ozdamar & Peng, 2005)

One of the model, is the Supply Chain Operations Reference (SCOR) that evaluates SC effectiveness and efficiency. The model is used to measure performance at multiple levels within the SC. The SCOR model also covers five key supply chain process namely planning, sourcing, making, delivery and return (Lockamy & McCormack, 2004). Most procedures are measured from five perspectives which include consistency, flexibility, cost considerations, and responsiveness. This study focused on flexibility, responsiveness, cost, quality and reliability in assessing the performance of SC.

1.1.3 Private Hospitals in Nairobi

A private hospital is one that is owned by a profit-oriented company or non-profit organization and is funded through out-of-pocket patient payments, insurance firms, and government-run insurance programs. Private hospitals serve different classes of the population based on their resource capability (Barnes, 2009). The private healthcare hospitals have grown by a wide margin for the past years due to the absence of quality health care systems in the public health sector and the introduction of user fees in 1989. The private sector is made up of a number of players including the following: hospitals, insurance companies, local drug manufacturers, multinational drug companies, pharmaceutical importers and distributors and relationship managers.

According to Oduwo et al. (2001), the law clearly gives distinction on the health care facilities that should be called hospitals, nursing homes among others, based on the features, equipment available and the years of operation. The challenge of classification has arisen due to the fact that most clinics change their names to nursing homes to obtain a higher amount of money by the National Hospital Insurance Fund (NHIF).

Private healthcare sectors make a high contribution to the delivery of healthcare services in Kenya. Their ability to improve efficiency and quality of care through the promotion of competitiveness to complementing the public sector has facilitated the filling of resource gaps. The presence of many suppliers in the marketplace has enabled the lowering of prices in health care. The government usually has only a limited capacity to monitor and enforce quality standards. Inspection of facilities and issuance of an operating license is carried out by The Pharmacy and Poisons Control Board (PPB) which has a large mandate for carrying out that task.

In Kenya, there are three major categories of hospitals i.e. category A, B and C as per the NHIF classification where category A are public hospitals, category B are the private and mission hospitals while category C are the private hospitals. Besides, NHIF further classifies them into those that provide inpatient and outpatient services to patients. There are 55 private hospitals within Nairobi, as per the classification by NHIF. This study will be based on all private hospitals which provide both inpatient and outpatient services. The private sector contributes more than 40% of health services in the country, which is a significant proportion, providing mainly curative health services (Kenya Facts & figures, 2012). Hospitals in Nairobi county operate in a dynamic environment with many stakeholders like the government, insurance firms, individual and institutional investors, and financial institutions. These hospitals will require implementing a number of strategies to create value for shareholders, beat the competition, increase their market share and operate in the long-run. They will be required to be innovative in the implementation of these strategies in order to efficiently adapt to the environment.

1.2 Research Problem

A substantial number of firms have realized the strategic role played by SCM in the attainment of the firm's performance within the industry of operation. Firms in both private and public sector are bound to elevate their standards of performance with a view to making value for money in their delivery of goods and services. Burgess, Singh and Koroglu (2006) highlighted the importance of SCM but noted there is little research done on outsourcing and its impact on supply chain performance. Any challenge experienced by any of the SC members results in a negative effect on the performance of the whole chain due to the high costs incurred in the long run. Outsourcing of non-core activities by firms helps to increase the performance of the entire members in the chain by focusing on the core activities.

Implementation of best practices in the health care organizations is problematic. Firms with adequate internal processes have failed to facilitate international SCM. This factor results in minimized partnering and collaboration among SC partners. Some players resort to traditional methods of operation which are expensive, time-consuming and rigid (Oduwo et al., 2001). Since a larger number of the top private hospitals in Kenya are situated in Nairobi city; offering specialized services to a large number of people, there exists a research gap in outsourcing as a supply chain best practice adopted by them.

Many studies have been carried out both locally and globally on the concept of outsourcing. Locally, Mugo (2013) undertook a study on the impact of logistics outsourcing on SC performance in the Kenyan mobile phone industry. The objective of

the study was to establish a connection between logistics outsourcing and SC performance. The study adopted the use of an interview guide for data collection purposes. The study findings revealed that there was a connection between logistics outsourcing and SC performance among mobile phone firms in Kenya. This study was based only on the Kenyan mobile phone service providers.

Siran (2017) carried out a study on outsourcing and commercial banks' performance. The goal was to clarify the impact that outsourcing had on commercial banks' performance. In addition, the study aimed at establishing the extent of commercial banks' outsourcing practices. Data collection was conducted in a total of 43 banks with the aid of questionnaires. Findings revealed that there was a positive correlation between outsourcing and performance of commercial banks. The limitation of the study was that it was solely focused on commercial banks in Kenya and hence the results could not be applied in the health sector and specifically private hospitals.

Therefore, there exists a research gap on service outsourcing and SC performance in private hospitals within Nairobi. Based on the fact that no study has been carried out on service outsourcing and SC performance in private hospitals within Nairobi, the study sought to answer the following questions:

1. What are the services commonly outsourced by private hospitals in Nairobi, Kenya?
2. What is the effect of outsourcing on supply chain performance of private hospitals in Nairobi, Kenya?

1.3 Research Objectives

The study objectives include the following:

- i. To establish the services that are commonly outsourced by private hospitals in Nairobi, Kenya.
- ii. To determine the effect of outsourcing on supply chain performance in private hospitals in Nairobi, Kenya.

1.4 Value of the Study

The study findings will be important to private hospitals in Nairobi as it will provide them with valuable information on how to gain a competitive advantage by the outsourcing of non-core activities and focusing on the core activities which is the provision of health care. This will, in the long run, improve their SC performance. The public hospitals will also find this study useful since they will use the findings in the improvement of their outsourcing strategy to acquire the best results.

To the government and policymakers, it will give insight into the formulation of policies governing the public hospitals on the aspects of adopting strategies like outsourcing of non-core activities. The government will benefit from increased levels of GDP due to the adoption of outsourcing by private hospitals. The research will increase awareness of the strategic benefits that arise through the outsourcing of non-core activities by firms. Academicians and other researchers will use this study as reference material for future studies on outsourcing and supply chain performance. Besides acting as a future reference, the study contributes to existing literature on outsourcing that is still under debate by scholars and business practitioners.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents various literature from previous researchers that were used to develop this study. It is subdivided into various sections: theoretical framework, the outsourced activities, organizational performance, empirical review, and conceptual framework.

2.2 Theoretical Framework

The outsourcing practice is a compound system entailing several actions and sub-actions, having many problems in the practice of management. Resource dependency theory and transaction cost economics theory will be used for this study as discussed below.

2.2.1 Resource-Dependence Theory

As earlier developed by Pfeffer and Salancik in 1978, the resource-dependency theory states that environments affect and constrains firms and hence firms act in order to control dependencies on resources by setting various forms of inter-organizational arrangements. This theory explains that the behavior of the firm is affected by the external resources of organizations. The sourcing of external resources is an important aspect for not only strategic management but also the tactical management of any firm (Sanderson, Lonsdale & Mannion, 2015).

The resource dependence theory is important as it explains the course of actions implemented by firms, like outsourcing their non-core services to get specialized services of external service providers in order for them to gain competitive advantage. Most organizations are not self-sufficient hence the need to come up with proper strategies to facilitate good performance such as forming strategic partnership and outsourcing to meet the market demand, hence customer satisfaction (Halldorson, Kotzab, Mikkola & Larsen, 2007).

2.2.2 Transaction Cost Economics Theory

Transaction Cost Economics (TCE) theory has guided SC researchers and practitioners over a long period of time. TCE theory states that firms are economic players using the most efficient mechanisms for transactions (Williamson, 1981). Coase (1937) specified that a transaction cost is one that is incurred through an economic exchange. There are two factors which can contribute to transaction costs. The first being risk of opportunity and secondly, a limited rationality which is, the inability of humans to predict all matters related to a transaction (Williamson, 1979). Williamson (1979) further stated that a transaction has three characteristics which are (1) incidence of trading, (2) uncertainty and (3) asset specificity.

The theory puts forward a logical framework used in making an evaluation between contracting services and providing the services internally (Lacity & Hirschheim, 1995). It also facilitates the determination of outsourcing success in terms of economic benefits. TCE offers the finest decision-making foundation to aid firms in deciding what to

outsource and all preparations required. The infrequency of contracting, environmental and association uncertainties are the drivers of the magnitude of transaction cost, which, in turn, offers a base for the assessment of outsourcing decision making.

Increased outsourcing results in lower production costs of the market. According to Lacity and Willcocks (1995), cost advantages are typically the main reasons cited by organizations that outsource. By moving from in-house production, a company is able to sustain lower production costs that the market is able to offer. Internal production is costlier due to internal inefficiencies, thus moving to a market through outsourcing overcomes these inefficiencies.

2.3 Service Outsourcing Practices

Norek and Pohlen (2001) defined outsourcing as the contracting out of one or more of an organization's business processes to an external service provider to assist increase shareholder value, by primarily decreasing operating cost and concentrating on core competencies. According to Kotabe, Mol and Murray (2008) outsourcing is a plan in which one firm offers services to another firm that could be or may have been provided internally. Corbett (1999) further defined outsourcing as an organizational strategy whereby a company delegates key, non-core functions to specialized and competent service providers.

Outsourcing facilitates improvement in capacity management, services, and innovation management, by the firms. This is due to the fact that the risk of inadequate capacity is borne by the suppliers (Quinn, 2006). There are many activities in an organization which

can be outsourced. The specific activities that can be outsourced by private hospitals include human resource management, cleaning services, information technology, sales and marketing, finance, logistics management, and security services.

The ICT outsourcing strategy is extensively linked with cost-cutting, initiation of new business projects and improving efficiency. The risks associated with ICT normally get initiated by inadequate control of internal weaknesses and external threats. External threats could be in form of natural forces that are beyond the control of a firm. Furthermore, internal weaknesses may be instigated by organizational circumstances, but both of these could have a hostile impact, trivial or major, on an organizational asset. Presently, the practice of converging computer platforms and open architecture has made it possible for firms to subcontract their ICT functions.

Human resource management outsourcing is, to a large extent, driven by a high need for a reduction in HR costs, (Greer, Youngblood & Gray, 1999). High competition in the markets, coupled with downsizing means that the HR departments strive to generate value for companies (Roberts, 2001). Outsourcing of HR function is one of the best ways to overcome organizational politics and improve organizational performance. The most outsourced HR activities include recruiting, training and development, job evaluation and employee relocation functions. By so doing, it facilitates the measurement of the value of HR. While some functions of the HR department could have been performed by other expert firms, HR outsourcing is viewed as a reliable means of improving efficiency.

Financial management function consists of auditing, tax compliance, cheque writing, financial reporting, billing, general accounting, specialized training, insurance and legal. In the contemporary world, there is increasing interest in finance outsourcing (Bailey, 2008). Payroll and benefits, payables, fixed assets, credit vetting and debt collection are the functions suitable for outsourcing under financial management.

According to Magutu et al. (2013), managers prefer to outsource logistics functions to enhance organizational performance. Moreover, Gilley, Greer and Rasheed (2004) highlight that managers who understand how to manage business practices are able to achieve improved performance. The practice of outsourcing improves the bottom line of the firm and highlights any performance gaps between service providers and outsourcing organizations.

Sales and marketing are one of the most outsourced activities of any firm. It involves outsourcing of all aspects to do with the marketing of the firm's products and ensuring timely delivery of products to the market and customer satisfaction. It ensures that all customer needs are fulfilled through timely customer support function. It includes instituting effective partnerships with clients who are constantly pursuing methods of continuous improvement in a firm to reduce costs. Outsourcing enables organizations to gain superior sales outcomes. The representative firm builds, trains and maintains the sales force (William, 2012).

Cleaning services and security services have recently been outsourced to a great extent by various firms in the country, both in the private sector and public sector. It involves outsourcing of all aspects to do with general cleaning services of the firm and provision of security services. It ensures that all customer needs are fulfilled through the availability of a secure working environment and adequate cleaning services which in the long run, facilitates reduction of the firm's operational costs (William, 2012).

2.4 Service Outsourcing and Supply Chain Performance

Outsourcing leads to greater flexibility in firms' operations which leads to long-term improved performance of the organization. Cost is the key driver to outsourcing and if well implemented, facilitates better performance of the organization due to substantial cost savings realized. As highlighted by Quinn (2000) outsourcing enables an organization to concentrate on core processes, improve timeliness due to a reduction in functional time, enhance growth, and to respond to changes in the market. Outsourcing also offers access to improved quality (Quinn, 2000) hence increase the company's performance. However, the development of quality may be ineffective without adequate monitoring and evaluation. While an organization's executives may avoid outsourcing core practices of a firm (Jennings, 1997), the lack of standardized policies within a firm may render the firm incompetent and cause low performance (Jennings, 1996). Outsourcing challenges can be classified into cost, strategy and politics. While cost and strategy are drivers of outsourcing in the private industry, outsourcing in the public sector is often driven by politics. The reasons why organizations outsource may vary but may be driven by elements from all three categories.

2.5 Empirical Literature Review

Peslak (2011) researched on outsourcing and offshore outsourcing of information technology in major corporations. The study objective was to assess the level of achievement in outsourcing and offshore outsourcing practices. Secondary sources were the main basis of data collection by the researcher. The study findings indicated that only 30 percent of the surveyed firms contracted out IT while only 25 percent engaged in offshore outsourcing of IT. From the study, it was also established that there is an association between the general use of outsourcing and higher IT returns. The study also revealed that there is no relationship between offshore outsourcing with higher IT return to the organization. This study failed to address the influence of outsourcing on supply chain performance but compared offshoring and outsourcing IT.

Hsiao (2011) carried out a study on logistics outsourcing by Taiwanese and Dutch food processing industries. The aim of this study was to establish the outsourcing of different sorts of logistics activities in Taiwanese food industry and benchmark with practices in the Netherlands. In its research methodology, the researchers adopted the use of a structured questionnaire for data collection. The study findings established that in both countries, 69% of the firms outsourced transportation, 16% packaging, while 37% outsourced transportation management. About 10% of the firms' outsourced the highest level of activities. The major weakness of the study was that it was based in Netherlands and Taiwan and hence the findings cannot be applied to African nations and specifically Kenya. Besides, the study was solely focused on food processing firms.

Machuki (2016) did a study on service outsourcing and SC performance among cement manufacturing organizations in Kenya. This study sought to determine the effect that service outsourcing has on SC performance of cement manufacturing organizations in Kenya. It adopted both descriptive and cross-sectional research designs while data was collected by the use of questionnaires. The study established that the reasons for outsourcing by these firms included the need to focus on core activities, reduction of cost, improved response to changing market demand and increased quality.

Table 2.1 Summary of Empirical Studies

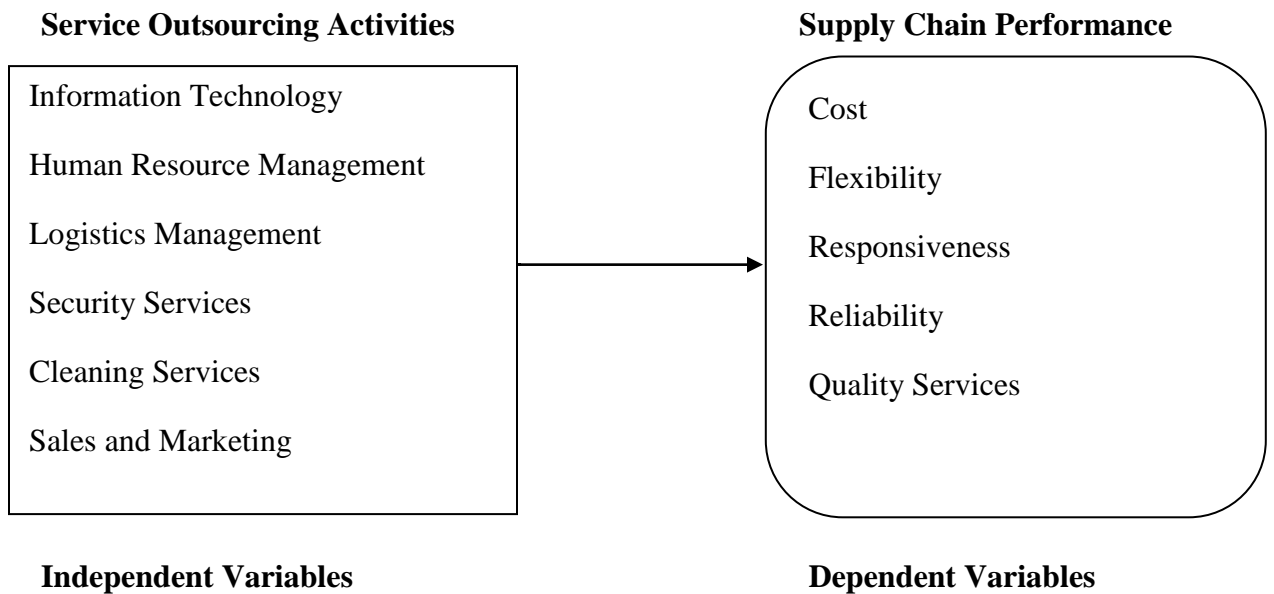
SCHOLAR (S)	STUDY	OBJECTIVES	MAJOR FINDINGS	KNOWLEDGE GAPS
Peslak (2011)	Outsourcing and offshore outsourcing of information technology in major corporations.	To ascertain the level of success in the adoption of systems outsourcing and offshore outsourcing	There was better performance of IT due to outsourcing as compared to off-shoring	The study failed to disclose the influence of outsourcing on supply chain performance but compared offshoring and outsourcing of systems.
Hsiao (2011)	Logistics outsourcing by Taiwanese and Dutch food processing industries	To establish outsourcing of different types of logistics activities in Taiwanese food industry and benchmark with practices in the Netherlands	Both countries did outsource and the activities outsourced were transportation, packaging, transportation management, and distribution network management	The study was based in Taiwan and the Netherlands. It also focused only on the food processing industry.
Mugo (2013)	The relationship between logistics outsourcing and supply chain performance of mobile phone service providers in Kenya	To ascertain the impact that logistics outsourcing has on supply chain performance of mobile phone service providers in Kenya	Logistics outsourcing has a positive impact on performance among mobile phone service providers in Kenya	The study, however, was based on only the mobile phone service providers and besides the study looked at logistics outsourcing specifically and not outsourcing as a whole
Siran, (2017)	Impact of outsourcing and performance of commercial banks in Kenya.	To establish the impact of outsourcing and performance of commercial banks in Kenya.	Outsourcing improves performance.	Was focused on commercial banks in Kenya.
Machuki (2016)	The effect that outsourcing of service quality has on supply chain performance among cement manufacturing firms in Kenya	To establish the impact that service outsourcing has on supply chain performance of cement manufacturing firms in Kenya.	Outsourcing of services had been adapted to a great extent and this resulted in improved supply chain performance among cement manufacturing firms in Kenya	The study only focused on cement manufacturing firms Kenya

Source: Researcher (2018)

2.6 Conceptual Framework

The independent variables are the outsourcing activities which include: information technology, security services, human resource management, logistics management, cleaning services financial management and sales and marketing. The dependent variable is represented by performance.

Figure 2.1: Conceptual Framework



Source: Author (2018)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The section contains information about the design of the research and population that was used in the study. The techniques that were used in data collection, analysis and presentation are also highlighted in this chapter.

3.2 Research Design

This study adopted a descriptive research design. It was used to explain the relationship between outsourcing and SC performance of private hospitals in Nairobi, Kenya. It was preferred because it ensured that the respondents' input is documented as practiced and easy to use (Orodho, 2003).

3.3 Population

The target population of this study included all private hospitals in Nairobi, Kenya. According to NHIF, there were 55 private hospitals in Nairobi, Kenya. Since the population was relatively small, a census was proposed.

3.4 Data Collection

The study respondents included the personnel in charge of procurement or their equivalent in private hospitals within Nairobi, Kenya. The study relied on primary data which were gathered through self-administered questionnaires, designed to contain both closed-ended and open-ended questions to elicit specific responses. The questionnaire was designed into three sections; Section A had questions on the bio-data of the organization's

personnel, section B addressed services commonly outsourced by private hospitals in Nairobi, Kenya, and section C was designed to establish the effect of outsourcing on supply chain performance of private hospitals in Nairobi, Kenya.

3.5 Data Analysis

The research data was both qualitative and quantitative in nature. Data collected was edited to ensure correctness. Data collected on the objective of finding out the services commonly outsourced by private hospitals in Nairobi, Kenya was analyzed by use of descriptive statistics. Data on the second objective of effects of outsourcing on SC performance of private hospitals in Nairobi, Kenya was analyzed by use of multiple regression analysis. The Statistical Package for Social Sciences (SPSS) version 23 was used in the computation.

$$\text{Regression equation } Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

$Y =$ Supply chain performance

$X_1 =$ Human resource management

$X_2 =$ Information communication technology

$X_3 =$ Logistics management

$X_4 =$ Sales and marketing

$X_5 =$ Cleaning services

$X_6 =$ Security services

$X_7 =$ Financial management

$\epsilon =$ Error term

$\beta_{ij} =$ Regression Coefficients

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter represents the results of the study, analysis and their interpretation. The primary data were gathered by use of self-administered questionnaires. The questionnaires were designed to contain both closed-ended and open-ended questions. Data on the first objective; which was to establish the services commonly outsourced by private hospitals in Nairobi, Kenya, was analyzed through descriptive research while those on the effects of outsourcing on supply chain performance were analyzed through multiple regression. The interpretation was done according to the study objectives.

4.2 Response Rate

Response rate evaluates the statistical strength of a study, assumed to be stronger when a greater percentage responded to a study. Out of the 55 questionnaires that were distributed, the researcher managed to collect 42 questionnaires that were adequately filled. This indicated a response rate of 76.4% which the study considered statistically powerful and adequate. As Mugenda and Mugenda (2003) outline, a rate falling above 70% is considered to be exceptional for a study.

All the collected questionnaires were verified for consistency, uniformity, completeness, and accuracy and none fell short of these standards. The researcher informed the respondents of the intended study and distributed the questionnaires for later picking. This was done to enable the filling of questionnaires at the respondents' own convenience to avoid controversy during their course of work. This method enabled the researcher to achieve an excellent response rate. For some reasons, some of the questionnaires were not completed and were returned while blank, with no information.

4.3 Demographic Features of Respondents

The study tested the respondents' demographic characteristics which included gender, age category, the highest level of education attained, and work experience. The results were as discussed below.

4.3.1 Gender Distribution of Respondents

The researcher sought to determine how the respondents' genders were distributed. The results were as presented in Table 4.1

Table 4. 1 Gender

Gender	Frequency	Percent
Male	27	64.29
Female	15	35.71
Total	42	100

Source: Research data (2018)

From Table 4.1 above, male respondents reflected 64.29% while female respondents were 35.71 %. This implies that a majority of respondents who participated in this study were male in gender.

4.3.2 Age Category

The study sought to determine the respondents' age distribution as summarized in Table 4.2. From table, findings indicate that 54.76% of the respondents fell between 35 and 44, 21.43% between 25 and 34 years, 21.43% between 45 and 54 years and only 2.38% aged above 55 years. Thus, a majority of respondents were aged between 35 and 44 years. The majority of respondents had a reliable age distribution and were considered relevant to help achieve the objectives of this study.

Table 4. 2: Age Category

Age Category	Frequency	Percent
25 - 34 years	9	21.43
35 - 44 years	23	54.76
45- 54 years	9	21.43
Over 55 years	1	2.38
Total	42	100.00

Source: Research data (2018)

4.3.3 Highest Level of Education Attained

The study also sought to ascertain the highest education level attained by the respondents.

The results were as shown in Table 4.3

Table 4. 3: Highest Level of Education Attained

Highest Level of Education Attained	Frequency	Percent
Postgraduate	7	16.67
Undergraduate	22	52.38
Technical/Vocational	13	30.95
Total	42	100.00

Source: Research data (2018)

As Table 4.3 indicates, 16. 67% of the respondents had attained a postgraduate level, 52.38% had attained Undergraduate level education and 30.95% had attained the Technical/Vocational level of education. From the findings, a majority of respondents have attained their first undergraduate degrees. Therefore, a total of 69.05% had reliable competencies and qualifications to respond to the study variables.

4.3.4 Work Experience

The researcher sought to determine the category of experience that respondents had. The results were as presented in Table 4.4.

Table 4. 4: Work Experience

Work Experience	Frequency	Percent
Less than 5 years	21	50.00
6 - 10 years	17	40.48
Over 11 years	4	9.52
Total	42	100.00

Source: Research data (2018)

As illustrated in Table 4.4 above, 9.52 % of respondents have over 11 years work experience, 50% less than 5years experience and 40% had between 6-10years experience. 50% of the respondents, therefore, had a relatively higher experience desirable in achieving the objectives of this study.

4.4 The Extent of Outsourcing by Private Hospitals in Nairobi, Kenya

This section represents the results of objective one which was to establish the extent to which outsourcing is practiced by private hospitals within Nairobi, Kenya. The services that were tested included human resource management, information communication technology, sales and marketing, logistics management, financial management, cleaning services and security services. Respondents were required to specify the extent to which they outsourced these services on a scale of 1-5 where 1 represented Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent.

4.4.1 Services Outsourced by Private Hospitals in Nairobi, Kenya

The study asked the respondents to indicate whether their respective hospitals outsourced the above services. The findings were as presented in Table 4.5

Table 4. 5: Services Outsourced by Private Hospitals in Nairobi, Kenya

Service	Frequency	Percent
Human Resource Management	4	9.52
Information Communication Technology	31	73.81
Logistics Management	21	50.00
Sales and Marketing	7	16.67
Cleaning Services	25	59.52
Security Services	37	88.10
Financial Management	16	38.10

Source: Research data (2018)

As Table 4.5 indicates, human resource management services were outsourced by 9.52% of respondents, ICT outsourced by 73.81% of respondents, logistics management services outsourced by 50%, sales and marketing services outsourced by 16.67%, cleaning services outsourced by 59.52%, security services outsourced by 88.1% and financial management services outsourced by 38.1% of respondents. Therefore, the findings indicate that security and ICT services were the most outsourced services outsourced by private hospitals in Nairobi, Kenya. The human resource management services were the least outsourced services.

4.4.2 Outsourcing of Human Resource Services

Respondents were also required to specify the extent to which the various human resource management activities were outsourced from service providers. This was measured on a Likert scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. The findings were as shown in Table 4.6. Findings indicate that the outsourcing of training of employees was the most outsourced activity with the highest mean of 1.12. The least outsourced activity was payroll management.

Table 4. 6: Outsourcing of Human Resource Management Services

Human Resource Management Service	Mean	Std. Deviation
Use of external firms in recruitment and staffing	1.05	.216
Use of external firms in training of employees	1.12	.504
Use of external firms in payroll management	1.00	0.000
Use of external firms in job evaluation	1.12	.453
Use of external firms to offer administrative responsibilities	1.10	.370
Use of external firms to offer rewards for best-performed employees	1.05	.216

Source: Research data (2018)

From table 4.6, results indicate that private hospitals within Nairobi, Kenya use service providers to train employees and conduct job evaluation the most out of all the other HR services.

4.4.3 Outsourcing of Information Communication Technology Services

The researcher asked respondents to determine the extent to which private hospitals outsource the various ICT services. This was to determine those particular ICT services that are outsourced the most. Measurement was based on a Likert scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. The information given by respondents was as summarized in Table 4.7. The findings revealed that most private hospitals outsourced ICT training services, which had the highest mean of 4.83. This was followed by the outsourcing of research services with a mean of 4.52. The least outsourced ICT service was the performance of systems operation and maintenance with a mean of 2.57.

Table 4. 7: Outsourcing of Information Communication Technology Services

ICT Services	Mean	Std. Deviation
Use of external firms to facilitate provision of software like Oracle and SAP used in operations of the firm.	3.64	1.122
Use of external service providers to carry out system operations and maintenance	2.57	1.039
Use of external firms to provide desktop computer services and maintenance	3.00	1.059
Use of external service providers in provision of software maintenances	3.40	1.211
Use of external firms to provide system maintenance	3.40	1.170
Use of external firms to provide Information system for the firm	3.33	1.243
Use of external firms to train staff on ICT issues	4.83	.537
Use of external firms for research	4.52	.862

Source: Research data (2018)

4.4.4 Logistics Management

Respondents were required to specify the extent to which private hospitals in Nairobi outsourced the various logistics management activities. This was also measured on a scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. The findings are presented in Table 4.8. The table indicates that the transportation of products (highest mean of 1.9), as a logistics activity was the most outsourced by private hospitals in Nairobi, Kenya. The table also indicates that managing distribution activities, and warehousing and storage services were outsourced on average, sharing a mean of 1.29. Inventory management had the

lowest mean of 1.21, indicating that inventory management services are majorly done in-house.

Table 4. 8: Outsourcing of Logistics Management Services

Logistics Management Services	Mean	Std. Deviation
Use of external firms in transportation of products	1.90	1.165
Use of external firms to managing all distribution activities	1.29	.636
Use of external firms in inventory management of products	1.21	.565
Use of external firms in warehousing and storage	1.29	.673

Source: Research data (2018)

4.4.5 Outsourcing Sales and Marketing

The researcher also required respondents to determine the extent to which the private hospitals under examination outsourced sales and marketing activities. This was also measured on a scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. The findings revealed as indicated in Table 4.9. It indicates that the private hospitals in Nairobi, Kenya outsourced for the sale of the hospital's products and services with a mean of 2.05, more than other marketing activities. The least outsourced service was the offering of aftersales services to customers.

Table 4. 9: Outsourcing of Sales and Marketing Services

Sales and Marketing Services	Mean	Std. Deviation
Use external firms to give after sale service to its customers	1.31	.604
Use of external firms to create awareness about the existence of various services by the hospital	1.57	1.039
Use of external firms for sale of the hospital's products and services	2.05	1.447
Use of other firms to carry out market research	1.74	.939
Use of external firms to advertise the firm's services	1.93	1.421

Source: Research data (2018)

4.4.6 Outsourcing of Cleaning Services

Respondents were required to specify the extent to which the private hospitals outsourced cleaning services. This was tested on a scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. The findings are revealed in Table 4.10. The table shows that the use of external firms to offer cleaning of floors in the hospitals was the most outsourced cleaning service with a mean of 3.14. This was followed by the cleaning of patients' beddings with a mean of 2.00. The general cleaning of the hospital's compound had the lowest mean of 1.95, showing that these hospitals preferred to perform such cleaning them in-house.

Table 4. 10: Outsourcing of Cleaning Services

Cleaning Services	Mean	Std. Deviation
Use of external service providers in general cleaning of the hospital's compound	1.95	1.361
Use of external service providers in the provision of cleaning of patients' beddings	2.00	1.431
Use of external service providers to offer cleaning of the floors in the hospitals	3.14	1.336

Source: Research data (2018)

4.4.7 Outsourcing of Security Services

Respondents were also required to specify the extent to which the private hospitals outsourced the various security services. This was also measured on a scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. The results were as presented in Table 4.11.

Table 4. 11: Outsourcing of Security Services

Security Services	Mean	Std. Deviation
Use of external service providers in the provision of security to the patients	1.76	1.303
Use of external service providers in the provision of checkup services at the gates	4.40	.939

Source: Research data (2018).

Table 4.11 above revealed that the most outsourced security service is the provision of checkup services at the gate, with the highest mean of 4.4. Provision of security services for patients was outsourced on a small scale with a mean of 1.76.

4.4.8 Outsourcing of Financial Services

The researcher asked respondents to determine the extent to which private hospitals in Nairobi, Kenya outsourced the various financial management services.

Table 4. 12: Outsourcing of Financial Management Services

Financial Management	Mean	Std. Deviation
Use external firms in auditing	2.36	1.708
Use of external service providers in the provision of petty cash services for the hospital staff	1.26	.665
Use of external services to provide salaries payment services	1.81	1.435
Use of external firms to provide cashier services for medicine and treatment payment services	1.31	.811
Use of external firms in the billing of daily expenditure	1.48	1.018
Use of external firms in filling returns	1.57	.991

Source: Research data (2018)

This was equally tested on a Likert scale of 1-5 where 1 stood for Not at all, 2 for Small extent, 3 for Moderate extent, 4 for Great extent and 5 for Very great extent. Findings are revealed in Table 4.12 which indicated that the most outsourced financial management activity by private hospitals in Nairobi, Kenya was the provision of auditing with the highest mean of 2.36. However, the rest of the financial management activities such as the provision of petty cash, salary payment, billing of daily expenditure and filing returns are outsourced on a small scale.

4.5 Outsourcing and Supply Chain Performance

The second objective of this study was to establish the effect of outsourcing on supply chain performance in private hospitals in Nairobi, Kenya. To establish this relationship, multiple regression analysis was adopted to examine how the independent variables; human resource management services, ICT, logistics management services, sales and marketing services, cleaning services, security services and financial management services were related to supply chain performance of private hospitals in Nairobi, Kenya. SPSS version 23 was used to enter, code and compute the data. The findings are as illustrated below.

4.5.1 Outsourcing and Cost Effectiveness

The study applied multiple regression analysis to establish the relationship that exists between all the outsourced and cost effectiveness as a performance aspect. The model summary was as indicated in table 4.13.

Table 4. 13: Model Summary of Cost Effectiveness

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
13.0	.485	.235	.073	1.034

a. Predictors: (Constant), Human Resource Management, Logistics Management, Cleaning Services, Finance Management, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

The summary in table 4.13 shows that there is a positive relationship ($R=0.485$) between service outsourcing and cost effectiveness of private hospitals in Nairobi, Kenya. The results also indicate a 0.235 value of the coefficient of determination (R^2) which shows that outsourcing services accounted for 23.5 % of cost effectiveness of private hospitals. To verify the results the ANOVA statistics was used as presented in table 4.14. A significant regression equation was found ($F(7, 33) = 1.449, p < .02$). The impact relayed by the predictor variables was significant to the cost effectiveness of private hospitals in Nairobi, Kenya. This indicates that the regression model applied had a higher predictive power to explain the relationship between service outsourcing and cost effectiveness.

Table 4. 14: Analysis of Variance for Cost Effectiveness

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.835	7	1.548	1.449	.020 ^b
	Residual	35.262	33	1.069		
	Total	46.098	40			

a. Dependent Variable: Cost Effectiveness
b. Predictors: (Constant), Human Resource Management, Logistics Management, Cleaning Services, Finance Management, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

The beta coefficients are presented in table 4.15 below. While holding the independent variables at a constant, private hospitals in Nairobi, Kenya will have a cost-effective performance of 4.169 as revealed in table 4.15

Table 4. 15: Coefficient of Cost Effectiveness

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.169	.961		4.338	.000
Finance Management	.225	.222	-.163	-1.015	.317
Security Services	.226	.244	.172	.926	.061
Cleaning Services	.186	.174	.173	1.063	.025
Sales and Marketing	.197	.222	-.148	-.891	.047
Logistics Management	.257	.261	.161	.985	.01
Information Communication Technology	.065	.258	-.046	-.252	.002
Human Resource Management	.126	.569	-.348	-1.979	.056

Source: Research data (2018)

An increased outsourcing of human resource management services would cause a rise in cost performance by 0.126, an increase in the outsourcing of ICT services would cause a rise in cost performance by 0.065, an increase in the outsourcing of logistics management services would cause a rise in cost performance by 0.257, an increase in the outsourcing of sales and marketing services would cause a rise in cost performance by 0.197, an increase in the outsourcing of cleaning services would cause a rise in cost performance by 0.186, an increase in the outsourcing of security services would cause a rise in cost performance by 0.226, and that an increase in outsourcing of financial management

services would cause a rise in cost performance by 0.225. Apart from security services (p=0.061), financial management (p=0.317), and human resource services (p=0.056), the rest of the predictor variables were statistically significant ($p \leq 0.05$). ICT (0.02), sales and marketing (0.047, logistics management (0.01), cleaning services (0.025).

4.5.2 Outsourcing and Flexibility

In determining the relationship between predictor variables and flexibility, the responses were as summarized in table 4.16

Table 4. 16: Outsourcing and Flexibility

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.640 ^a	.410	.284	.942

a. Predictors: (Constant), Human Resource Management, Logistics Management, Cleaning Services, Finance Management, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

According to the summary, table 4.16 indicates a positive relationship ($R=0.64$) between service outsourcing and flexibility of private hospitals in Nairobi, Kenya. The results also indicate a 0.41 value of the coefficient of determination (R^2) which shows that services outsourcing accounted for 41 % of flexibility of private hospitals.

The ANOVA statistics were also used to test the results as shown in table 4.17. A significant regression equation was found ($F(7, 33) = 3.272, p < .005$). The impact relayed by the predictor variables was significant to the flexibility of private hospitals in Nairobi,

Kenya. This indicates that the regression model applied had a higher predictive power to explain the relationship between service outsourcing and flexibility.

Table 4. 17: Analysis of Variance

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.305	7	2.901	3.272	.005
	Residual	29.256	33	.887		
	Total	49.561	40			

a. Dependent Variable: Flexibility
b. Predictors: (Constant), Human Resource Management, Logistics Management, Cleaning Services, Finance Management, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

The beta coefficients are presented in table 4.18 below. While holding the independent variables at a constant, private hospitals in Nairobi, Kenya will have a flexibility-performance of 4.885. A rise in outsourcing of human resource management services would cause a rise in flexibility by 2.199, a rise in the outsourcing of ICT services would cause a rise in flexibility by 0.226, a rise in the outsourcing of logistics management services would cause a rise in flexibility by 0.334, a rise in the outsourcing of sales and marketing services would cause a rise in flexibility by 0.009, a rise in the outsourcing of cleaning services would cause a rise in flexibility by 0.096, a rise in the outsourcing of security services would cause a rise in flexibility by 0.354, and that a rise in outsourcing of financial management services would cause a rise in flexibility by 0.15.

Most of the predictor variables were not statistically significant; cleaning services (p=0.548), logistics management services (p=0.17), financial management (p=0.064), and sales and marketing (p=0.065). The rest of the predictor variables were statistically significant (p≤0.05). ICT (0.043), and human resource management (0.000), financial management services (0.064), and security services (p=0.021)

Table 4. 18: Coefficients of Flexibility

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	4.885	.875		5.582	.000
Finance Management	.150	.202	-.105	-.742	.064
Security Services	.354	.222	.260	1.592	.021
Cleaning Services	.096	.159	.087	.607	.548
Sales and Marketing	.009	.202	-.006	-.044	.065
Logistics Management	.334	.238	-.201	-1.403	.170
Information Communication Technology	.226	.235	.154	.962	.043
Human Resource Management	2.199	.518	-.655	-4.243	.000

a. Dependent Variable: Flexibility

Source: Research data (2018)

4.5.3 Outsourcing and Responsiveness

The regression summary presenting the relationship between predictor variables is presented in table 4.19. The summary shows that there is a positive relationship ($R=0.494$) between service outsourcing and responsiveness of private hospitals in Nairobi, Kenya. The results also indicate a 0.244 value of the coefficient of determination (R^2) which shows that services outsourcing accounted for 24.4 % of hospital's responsiveness.

Table 4. 19: Model Summary for Responsiveness

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.494	.244	.089	.865

a. Predictors: (Constant), Human Resource Management, Logistics Management, Finance Management, Cleaning Services, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

The ANOVA statistics were also used to test the results as shown in table 4.20. A significant regression equation was found ($F(7, 34) = 1.569, p < .048$). The impact relayed by the predictor variables was significant to the responsiveness of private hospitals in Nairobi, Kenya. This indicates that the regression model applied had a higher predictive power to explain the relationship between service outsourcing and responsiveness.

Table 4. 20: Analysis of Variance

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.207	7	1.172	1.569	.048
	Residual	25.412	34	.747		
	Total	33.619	41			

a. Dependent Variable: Responsiveness
b. Predictors: (Constant), Human Resource Management, Logistics Management, Finance Management, Cleaning Services, Sales and Marketing, Information Communication Technology, Security Services

Source: Research Data (2018)

The beta coefficients in table 4.21 testing the relationship indicates that when all the independent variables are held at a constant, private hospitals in Nairobi, Kenya will have a responsiveness of 2.95. A rise in the outsourcing of human resource management services would cause a rise in responsiveness by 0.416, a rise in the outsourcing of ICT services would cause a rise in responsiveness by 0.118, a rise in the outsourcing of logistics management services would cause a rise in responsiveness by 0.179, a rise in the outsourcing of sales and marketing services would cause a rise in responsiveness by 0.053, a rise in the outsourcing of cleaning services would lead to an increase in responsiveness by 0.343.

Table 4. 21: Coefficients of Responsiveness

Model	Coefficients				
	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	2.950	.802		3.677	.001
Finance Management	.036	.166	-.034	-.220	.027
Security Services	.221	.204	.199	1.086	.285
Cleaning Services	.343	.142	.388	2.422	.121
Sales and Marketing	.053	.185	-.047	-.285	.777
Logistics Management	.179	.216	.132	.828	.034
Information Communication Technology	.118	.214	-.098	-.551	.015
Human Resource Management	.416	.475	-.151	-.876	.047

a. Dependent Variable: Responsiveness

Source: Research data (2018)

A rise in the outsourcing of security services would lead to an improvement in responsiveness by 0.221, and that an increase in the outsourcing of financial management services would lead to an improvement in responsiveness by 0.036.

However, three of the predictor variables were not statistically significant as shown in table 4.21. There included security services ($p=0.285$), cleaning services ($p=0.121$), sales and marketing ($p=0.777$). The predictor variables that were considered statistically significant with a significance level less than 0.05 ($p \leq 0.05$) included financial

management (0.027), logistics management (0.034), ICT services (0.015) and human resource management (0.047).

4.5.4 Outsourcing and Quality Improvement

Table 4.22 indicates the summary upon the regression testing the relationship between service outsourcing and quality improvement.

Table 4. 22: Model Summary of Quality Improvement

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.618	.382	.254	.990
a. Predictors: (Constant), Human Resource Management, Logistics Management, Finance Management, Cleaning Services, Sales and Marketing, Information Communication Technology, Security Services				

Source: Research data (2018)

The summary shows that there is a positive relationship ($R=0.618$) between service outsourcing and quality improvement of private hospitals in Nairobi, Kenya. The results also indicate a 0.382 value of the coefficient of determination (R^2) which shows that services outsourcing accounted for 38.2 % of the hospital's quality improvement. The ANOVA statistics were also used to test the results as shown in table 4.23. A significant regression equation was found ($F(7, 34) = 2.999, p < .015$). The impact relayed by the predictor variables was significant to the quality improvement of private hospitals in Nairobi, Kenya. This indicates that the regression model applied had a higher predictive power to explain the relationship between service outsourcing and quality improvement.

Table 4. 23: Analysis of Variance

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.576	7	2.939	2.999	.015
	Residual	33.329	34	.980		
	Total	53.905	41			

a. Dependent Variable: Quality Improvement
b. Predictors: (Constant), Human Resource Management, Logistics Management, Finance Management, Cleaning Services, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

In measuring the relationship as indicated in table 4.24, the beta coefficient indicates that when all independent variables are held constant, private hospitals in Nairobi, Kenya will have a quality improvement of 1.292. An increased outsourcing of human resource management services would lead to an increase in quality improvement by 0.55, an increase in the outsourcing of ICT services would lead to quality improvement by 0.529, an increase in the outsourcing of logistics management services would lead to quality improvement by 0.209, an increase in the outsourcing of sales and marketing services would lead to quality improvement by 0.041, an increase in the outsourcing of cleaning services would lead to quality improvement by 0.158.

Table 4. 24: Coefficients of Quality Improvement

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	1.292	.119		1.407	.000
Finance Management	.277	.190	-.206	-1.456	.155
Security Services	.618	.233	.440	2.648	.012
Cleaning Services	.158	.162	.142	.976	.036
Sales and Marketing	.041	.212	-.029	-.193	.048
Logistics Management	.209	.248	-.121	-.842	.005
Information Communication Technology	.529	.245	.346	2.159	.038
Human Resource Management	.550	.544	-.157	-1.011	.019

a. Dependent Variable: Quality Improvement

Source: Research data (2018)

Table 4.24 indicates that financial management ($p=0.155$) was not statistically significant. The rest of the predictor variables were statistically significant as follows: security services ($p=0.012$), cleaning services ($p=0.036$), sales and marketing ($p=0.048$), logistics management services (0.005), ICT (0.038), and human resource management (0.019).

4.5.5 Outsourcing and the Overall Supply Chain Performance

As shown in table 4.25, there was a significant and positive relationship ($R=0.625$) between service outsourcing and supply chain performance of private hospitals in Nairobi, Kenya. According to Tremblay (2010), the value R (0.625) indicates a positive direction. They also outline that big absolute values of R show that the relationship under investigation is stronger. The results also indicate a 0.39 value of the coefficient of determination (R^2) which shows that services outsourcing accounted for 39% of supply chain performance. Therefore, the other 61% could be explained by variables that were not of interest in this study.

Table 4. 25: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.625	.390	.265	.634
a. Predictors: (Constant), Finance Management, Human Resource Management, Logistics Management, Cleaning Services, Sales and Marketing, Information Communication Technology, Security Services				

Source: Research data (2018)

4.5.6 Analysis of Variance (ANOVA)

The results were verified through ANOVA statistics as indicated in Table 4.26.

Table 4. 26: Analysis of Variance

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.747	7	1.250	3.111	.012 ^b
	Residual	13.657	34	.402		
	Total	22.405	41			

a. Dependent Variable: Supply Chain Performance
b. Predictors: (Constant), Finance Management, Human Resource Management, Logistics Management, Cleaning Services, Sales and Marketing, Information Communication Technology, Security Services

Source: Research data (2018)

A significant regression equation was found ($F(7, 34) = 3.111, p < .012$). Therefore, the impact relayed by service outsourcing was significant to the supply chain performance of private hospitals in Nairobi, Kenya. This indicates that the regression model adopted in this study had a higher predictive power to explain the relationship.

The results in Table 4.27 indicate that supply chain performance of private hospitals in Kenya would be at 5.092 if all the factors (independent variables) were held at a constant. An increased outsourcing of human resource management services would lead to an increase in supply chain performance by 0.691. An increase in the outsourcing of ICT services would lead to an increase in supply chain performance by 0.068, an increase in the outsourcing of logistics management services would lead to an increase in supply chain performance by 0.32, an increase in the outsourcing of sales and marketing services would lead to an increase in supply chain performance by 0.163, an increase in the

outsourcing of cleaning services would lead to an increase in supply chain performance by 0.18. An increase in the outsourcing of security services would lead to an increase in supply chain performance by 0.194, and that an increase in outsourcing of financial management services would lead to an increase in supply chain performance by 0.23. Based on a significance level of 0.05 (5%), the following independent variables are statistically significant because they have a value less than 0.05; ICT (0.03), sales and marketing (0.039), logistics management (0.041), cleaning services (0.000), security services (0.03). The statistically insignificant variables include human resource management and financial management services.

Table 4. 27: Regression Coefficients

Coefficients						
Model	Unstandardized Coefficients			Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.	
1 (Constant)	5.092	.588		8.660	.000	
Human Resource Management	.691	.349	-.306	1.983	.065	
Information Communication Technology	.068	.157	-.069	.981	.003	
Logistics Management	.320	.158	.289	2.020	.041	
Sales and Marketing	.163	.136	-.177	1.199	.039	
Cleaning Services	.180	.104	.250	1.734	.000	
Security Services	.194	.149	-.214	1.297	.03	
Finance Management	.230	.122	.265	1.886	.078	

a. Dependent Variable: Supply Chain Performance

Source: Research data (2018)

From the findings in Table 4.27, the regression equation is therefore expressed as:

Regression equation $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$

$Y = 5.092 + 0.691X_1 + 0.068 X_2 + 0.32 X_3 + 0.163 X_4 + 0.18 X_5 + 0.194 X_6 + 0.23 X_7 + \epsilon$

$Y =$ Supply chain performance

$X_1 =$ Human resource management

$X_2 =$ Information communication technology

$X_3 =$ Logistics management

$X_4 =$ Sales and marketing

$X_5 =$ Cleaning services

$X_6 =$ Security services

$X_7 =$ Financial management

$\epsilon =$ Error term

$\beta_{ij} =$ Regression Coefficients

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines the discussion of the major findings of the study in relation to literature theories. The objectives of this study were to determine the services that are commonly outsourced by private hospitals in Nairobi, Kenya, and to establish the effect of outsourcing on supply chain performance of private hospitals in Nairobi, Kenya. The conclusions are then outlined and recommendations made. The chapter then provides suggestions for further studies.

5.2 Summary of Findings

Based on the demographic features, a majority of respondents who participated in the study were male and the rest female. It was also established that the majority of the respondents were middle-aged adults and a majority of them had attained undergraduate degrees. Additionally, about half of the respondents had work experience exceeding 6 years, and the study found the respondents liable to in achieving the objectives of this study.

The first objective of this study was to determine the services that are commonly outsourced by private hospitals in Nairobi, Kenya. The study established that ICT services, logistics management services, cleaning services, and security services were the most commonly outsourced services. ICT and security services were outsourced to the greatest extents. However, the study established that human resource management

services, sale and marketing services, and financial management services were not commonly outsourced by private hospitals; since they were only outsourced to a small extent. This indicated that private hospitals mostly focus on core business by outsourcing those activities that are less significant. The high extent to which ICT was outsourced indicates that private hospitals strive to eliminate costs as much as possible. The lower extent to which human resource management, sales and marketing, and financial management services were outsourced indicates that such services can best be conducted and controlled internally. Through the hiring of qualified staff, HR, sales and marketing, and finance functions are considered manageable. The logistics management and cleaning services were outsourced averagely implying that private hospitals did not abandon the need to maintain cleanliness as well as transportation functions.

The second objective was to determine the effect of service outsourcing on supply chain performance of private hospitals in Nairobi, Kenya. The findings of the study revealed that there was a positive relationship between service outsourcing and supply chain performance. Therefore, service outsourcing improves supply chain performance of private hospitals in terms of the increased level of productivity, improved productivity of staff, reduction in the cost of operation, savings on costs of hiring employees, timeliness, improved quality, and improved financial performance.

5.3 Conclusion

The study sought to determine the services that were commonly outsourced by private hospitals in Nairobi, Kenya. The study concludes that ICT and security services are outsourced to the highest extent by private hospitals. The study also concludes that

human resource functions, financial, and sales and marketing functions are outsourced to a very small extent by private hospitals. The services that are outsourced to a moderate extent include logistics management and cleaning services.

On the next objective which was to establish the effect of service outsourcing on supply chain performance, the study concludes that service outsourcing improves supply chain performance of private hospitals in terms of increased level of productivity, improved productivity of staff, reduction in cost of operation, savings on costs of hiring employees, timeliness, improved quality, and improved financial performance.

5.4 Recommendations of the Study

The study recommends that companies should carefully review their outsourcing strategies to use service providers in the delivery of certain services that are not significant in operation. This should be done in the quest for reduced cost of handling services that a firm does not specialize in. The study also recommends that companies should only outsource services that are significant and requiring the intervention of experts. The study also recommends that ICT services, on the verge of stiff global competition, should be at the forefront of the services outsourced by companies.

5.5 Limitations of the Study

The researcher had a hard time acquiring information from most respondents as they feared that information gained would distort their reputation. Despite the available documents to validate the research, some respondents refused to participate at all. The respondents who agreed to participate did so after within limited periods of time; in a

hurried manner. Most hospitals refused to participate in the study mentioning that the firm's policy did not allow the dissemination of any proprietary information. Data collection was also carried out within a very limited time. This forced the researcher to demonstrate utmost patience and to even book appointments with a few of the respondents during odd hours to facilitate a higher response rate.

5.6 Suggestions for Further Studies

Depending on a company's specific characteristics, there are many other services that can be outsourced. The study suggests that future studies need to dwell much on those services that were not of interest in this research to establish how their outsourcing affect supply chain performance. This study recommends that a similar study should be done in the future, but on other industries to establish whether results and findings will vary.

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APPENDICES

APPENDIX 1: QUESTIONNAIRE

This questionnaire is intended to provide information for the study on outsourcing and supply chain performance of private hospitals in Nairobi. Please note that the information provided will be used for academic purpose only and will be treated with utmost confidentiality.

Please answer the following questions by ticking (√) in the appropriate box or by giving the necessary details in the spaces provided.

SECTION A: GENERAL INFORMATION

1. Kindly indicate your gender: Male [] Female []

2. Kindly indicate your age category:

25 - 30 Years []

31 - 34 years []

35 – 40 years []

41 – 44 years []

45 – 50 years []

Over 51 years []

3. Level of Education Attained

Primary []

Secondary []

Technical / Vocational []

Undergraduate []

Postgraduate []

4. Work experience (Years)

Less than 5 years []

5-10 years []

Over 10 years []

SECTION B: THE EXTENT OF OUTSOURCING BY PRIVATE HOSPITALS IN NAIROBI

Please indicate whether your hospital has outsourced the following activities, by ticking either YES/NO.

PRACTICE	YES	NO
Human resource management		
Information communication technology		
Logistics management		
Sales and marketing		
Cleaning services		
Security services		
Financial management		

If YES, please rate on a scale of 1-5 the extent your organization has outsourced the above activities. Tick where appropriate. Where; (1)-Not at all, (2)-Small extent (3)-Moderate extent (4)-Great extent and (5)-Very great extent

PRACTICE	1	2	3	4	5
Human Resource Management					
Recruitment and staffing					
Use external firms in training of employees					
Use external firms in payroll management					
Use external firms in job evaluation					
Use of external firms to offer training of staff					
Use of external firms to offer administrative responsibilities					
Use of external firms to offer rewards for best performed employees					
Information Communication Technology					
Use external firms to facilitate provision of software like Oracle, SAP used in operations of the firm					
Use external firms for research					
Use of external firms to train staff on ICT issues					
Use of external firms to provide Information system for the firm					
Use of external firms to provide system maintenance					
Use of external service providers in provision of software maintenances					
Use of external firms to provide desktop computer					

services and maintenance					
Use of external service providers to carry out system operations and maintenance					
Logistics Management					
Use external firms to in transportation of products					
Use of external firms in warehousing and storage					
Use external firms in inventory management of products					
Use of external firms to manage all distribution activities					
Sales and Marketing					
Use external firms to give after sale service to its customers					
Use of outside firms to advertise firm's services					
Use of other firms to carry out research					
Use of outside firms to carry out sales promotion					
Use of external firms for sale of the hospital's products and services					
Use of external firms to create awareness about the existence of various services by the hospital					
Use of external firms to provide sales services					

Cleaning Services					
Use of external service providers to offer cleaning of the floors in the hospitals					
Use of external service providers in provision of cleaning of patients' beddings					
Use of external service providers in general cleaning of the hospital's compound					
Security Services					
Use of external service providers in provision of security at the hospital gates					
Use of external service providers in provision of checkup services at the gates					
Use of external service providers in provision of security to the patients					
Financial Management					
Use external firms in auditing					
Use of external firms in filling returns					
Use external firms in billing of daily expenditures					
Use of external firms to provide cashier services for medicine and treatment payment services					
Use of external services to provide salaries payment services					

Use of external service providers in provision of petty cash services for the hospital staff					
Use of external service providers in provision of finance activities for the staff					

SECTION C: SUPPLY CHAIN PERFORMANCE OF PRIVATE HOSPITALS IN NAIROBI.

Indicate to what degree the various outsourced activities affect performance using the various performance indicators. Kindly rate on a scale of 1-5 where; **(1)**-Not at all, **(2)**-Small extent **(3)**-Moderate extent **(4)**-Great extent and **(5)**-Very great extent

No.	Statement	Not at all	Small Extent	Moderate Extent	Great Extent	Very Great Extent
		1	2	3	4	5
a	Outsourcing of non-core activities has reduced the cost of operation					
b	Outsourcing of non-core activities has improved the responsiveness of the hospital					
c	Outsourcing of non-core activities has improved the delivery of					

	quality healthcare services					
d	Outsourcing has enabled the hospital to be reliable					
e	Outsourcing has improved flexibility; the hospital can adjust into various healthcare services.					

Thank you for your cooperation

APPENDIX II: PRIVATE HOSPITALS IN NAIROBI

No.	Hospital	Postal Address	Branch	Category
1	Abrar Health Services Ltd	18501 00100	Buruburu	C
2	Andalus Nursing Home	57175 Nairobi	Eastleigh	C
3	Avenue Healthcare Ltd	45280 Nairobi	Westlands	C
4	Better Living Hospital	48629 Nairobi	Nairobi	C
5	Brain Spine and Rehabilitation	2488 Nairobi	Westlands	C
6	Care Hospital Limited	46041 Nairobi	Eastleigh	C
7	Chiromo Lane Medical Centre	73749 Nairobi	Westlands	C
8	Coptic Hospital	21540 Nairobi	Nairobi	C
9	Edelvale Trust Jamaa H&M Hospital	17153 Nairobi	Buruburu	C
10	Emarat Hospital	198-006 Nairobi	Eastleigh	C
11	Family Health Options	30581 Nairobi	Industrial Area	C
12	Gertrudes Garden Childrens Hospital Nbi	42325 Nairobi	Westlands	C
13	Guru Nanak Ramgarhia Sikh Hospital	33071 Nairobi	Ruaraka	C
14	H.H. Agakhan Hospital (Nairobi)	30270 Nairobi	Westlands	C
15	Hayat Hospital	105784 Nairobi	Eastleigh	C
16	Joy Nursing & Maternity Eastleigh	52569 Eastleigh	Eastleigh	C

17	Kayole Hospital	67617 Nairobi	Buruburu	C
18	Kenyatta National Hospital (Amenity Wing)	20723 Nairobi	Nairobi	C
19	Komarock Modern Healthcare Utawala	23728 Nairobi	Buruburu	C
20	Ladnan Hospital Limited	2534 0200 Nairobi	Eastleigh	C
21	Lions Sight First Eye Hospital	66576 Nairobi	Kangemi	C
22	Madina Hospital Limited	78370 Nairobi	Eastleigh	C
23	Makkah Hospital Limited	45807 Eastleigh	Eastleigh	C
24	Maria Immaculate Hospital	57216 Nairobi	Kangemi	C
25	Mariakani Cottage Hospital	12535 Nairobi	Industrial Area	C
26	Mariakani Cottage Hospital, Utawala	12535 00400- Nairobi	Industrial Area	C
27	Mary Immaculate Health Centre Bahati	46377 Nairobi	Gikomba	C
28	Mater Misericordiae Hospital Nairobi	30325 Nairobi	Industrial Area	C
29	Melchizedek Hospital	20085 Nairobi	Nairobi	C
30	Menelik Medical Center	55164 Nairobi	Nairobi	C
31	Metropolitan Hospital	33080 Nairobi	Buruburu	C
32	Midhill Maternity & Nursing Home	21138 Nairobi	Nairobi	C

33	Mother & Child Hospital	77918 Nairobi	Eastleigh	C
34	Nairobi East Hospital Limited	51863 Nairobi	Eastleigh	C
35	Nairobi Equator Hospital	44995 Nairobi	Industrial Area	C
36	Nairobi Hospital Nairobi	30026 Nairobi	Nairobi	C
37	Nairobi Outpatient Centre	5308 Nairobi	Nairobi	C
38	Nairobi West Hospital	43375 Nairobi	Industrial Area	C
39	Nairobi Womens Hospital	10552 Nairobi	Nairobi	C
40	Neema Hospital	32183 Nairobi	Ruaraka	C
41	Ngumba Center And Laboratory Services	412 Ruaraka	Ruaraka	C
42	Parkroad Nursing Home (Nairobi)	19850 Nairobi	Ruaraka	C
43	Radiant Group Of Hospitals	48234 Nairobi	Eastleigh	C
44	Radiant Group Of Hospitals Umoja	65973 Nairobi	Buruburu	C
45	Ruaraka Uhai Neema Hospital	65122 Nairobi	Ruaraka	C
46	S.S. League M.P Shah Hospital Nairobi	14497 Nairobi	Westlands	C
47	Samaritan Medical Services	212 Dandora	Ruaraka	C
48	South B Hospital	49255 Nairobi	Industrial Area	C
49	St. Johns Hospital Ltd	51754 Nairobi	Ruaraka	C
50	St.Francis Community Hospital	62676 Nairobi	Ruaraka	C
51	Texas Cancer Centre	13-002 Nairobi	Nairobi	C
52	The Nairobi South Hospital Limited	74079 Nairobi	Industrial Area	C

53	The Zambezi Hospital	26702 Nairobi	Industrial Area	C
54	Umoja Hospital	76480 Nairobi	Buruburu	C
55	Wema Maternity And Nursing Home	8328 Nairobi	Kangemi	C

Source, *NHIF*, (2018)