

**DETERMINANTS OF DEMAND FOR HEALTHCARE SERVICES IN PRIVATE  
HOSPITALS IN KENYA**

**By**

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## DECLARATION

This research project is my original work and has not been presented for examination or award in any other university.

Sign \_\_\_\_\_

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

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Date \_\_\_\_\_

Dr. Martine Oleche

## **DEDICATION**

I dedicate this project to my family: Ken, Levi, Angela and Noelle; for the support love and understanding. Special gratitude goes to my cherished children; Levi, Angie and Noelle, for your constant encouragement, unending love and prayers that kept me going.

I am greatly indebted to my best friend and the love of my life, Ken Wanyoike. Your constant encouragement, prayers and moral support when I had to burn the mid-night oil can't go unnoticed.

You have had to double up the role of a father and that of a mother when I had to spend long hours in the library. When I gave up on econometric model, you cheered me up and affirmed me that I can make it. You have been a great source of inspiration to me.

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## LIST OF ABBREVIATIONS

KHHEUS	Kenya Household Economic Utilization Survey
KNH	Kenyatta National Hospital
MoH	Ministry of Health
NHIF	National Health Insurance Fund
NHS	National Health Services
PHC	Private Health Care
SDG	Sustainable Development Goals
WHO	World Health Organization

## ABSTRACT

Access to quality healthcare has been a long term policy issue in Kenya, as well as in many countries globally; both developed and developing ones alike. The exponential growth of the private health care sector is a matter of concern to those in policy making positions. This study therefore intended to find out the determinants of demand for healthcare services in private hospitals in Kenya. The objectives of the study were to analyze the trends of utilization of healthcare services in private hospitals in Kenya; and to establish the determinants of demand for healthcare services in private hospitals in Kenya. The study explored the determinants of demand by using binary probit regression model which lies on an interval of between 0 and 1. The study utilized the Kenya Household Health Expenditure and Utilization Survey of 2013, which consists of household-based cross sectional survey data on expenditures and utilization of health care services. The study employed an econometric model to determine their relationships with demand for health care services from private hospitals. At 5% significance level, the study revealed that an additional year increased the probability of demand for private hospital care by 0.0024% holding other factors constant. This means that as one gets older, the likelihood of using private health facility is high. This may be associated with either improved quality care, economic status or factors associated with bypassing hospitals. In addition, the study found that at 1% level of significance, an extra level of education led to a statistical significance increase in probability of demanding private hospital care by 5.75% at *ceteris paribus*. The study indicated that individuals with access to health information through mass media had high likelihood of increased demand for private hospital care at 10% level of significance by 2.58% holding other factors constant.

## **CHAPTER ONE: INTRODUCTION**

### **1.0 Introduction**

This chapter is a general introduction of the study and deals with the background of the study, statement of the problem, the study objectives, the research questions and significance of the study.

### **1.1 Background of the study**

Various government initiatives have been established in Kenya aimed at addressing access to healthcare in relation to policy and access. Strategies such as devolution of healthcare management, public health insurance schemes and even restructuring of the health sector have been considered. Nevertheless, demand for healthcare from private institutions coexists alongside the public sector, where healthcare services are privately financed by way of direct payments or use of health insurance. The economic systems and socio-economic patterns in the country have been changing rapidly, creating inequalities among regions and populations and this has inevitably affected the provision and access to healthcare services (Ministry of Health, 2014).

The public health sector is funded by the exchequer to address the population's demand for and access to relevant health services. However, demand for healthcare services in the private sector has continued to grow, and recently, the National Health Insurance Fund (NHIF) has expanded its coverage to more private healthcare providers, as a means of meeting the government's objectives of addressing demand for healthcare, and to provide health security for the population. Healthcare institutions have continuously developed or adopted initiatives towards increasing accessibility of healthcare services in order to meet the population's demand. This is because people are constantly looking for healthcare services which will meet their needs (Ministry of Health, Government of Kenya, 2014).

Colombo and Tapay (2004) observe that the growth of the private health care sector is a matter of concern to those in policy making positions. This is because of the impact that the private market for health care has on the on the publicly funded systems. Arguments have been raised with regard to the roles and effects of the private sector healthcare providers, and whether or not they ease off some of the pressure faced by the public

health systems. This is against the disparities in perceptions of quality of care, efficiency in service provision as well as funding constraints. Other arguments have supported the development of the private healthcare as it is deemed to promote clients' unique tastes and preferences.

Health care, as an input into health production is valued only when it has a positive marginal product. However, the imperfection in health care markets does not meet the patients demand for healthcare services hence consuming valueless services. The World Health Organization's (WHO) framework for action for strengthening health systems identifies quality and accessibility as an important factor in improving health service delivery (WHO, 2007). Health care leaders and professionals are not only focusing on improving accessibility to health care services but also on patient safety in ways they never have before due to dynamism of the health services.

Globally, governments through the relevant Ministries of health undertake responsibilities such as formulating overall health policies, regulating activities of health institutions and related agencies, superintending over public health matters, and acting as a channel for sectoral financing (Berman et al., 2014). While the extent to which the governments are engaged in the financing, management and provision of health services differs from one country to another, all governments express a measure of concern for the public's health. Health systems are therefore responsible not just to protect the health of societies, but also improve people's health. Provision of affordable health services in hospitals within these systems often determines their sustainability and appreciation by patients and clients.

An expanded role for the private sector became a health sector reform theme of the 1990s. The main thrust of this was the search for solutions to challenges of meeting the fiscal demands and the management of resources such as personnel, drug supplies and development of physical facilities (World Health Organization (WHO), 2010). The WHO proposed that the available resources would achieve more effectiveness through reallocation; in addition to ensuring that the public health sector afforded a majority of the populace with affordable essential healthcare. However, the drawback to this approach was the promotion of a dichotomous health structure that was characterized by

the rich opting for high cost private healthcare providers, with a majority of the populace who had no such means relying on the publicly run health institutions.

### **1.1.1 Health Care Service Provision**

There is a significant disparity in the nature and structure of the health sector in the developed and in the developing countries. As a result of the public resources holding sway in the financing of medical care in a number of developed countries; for example the United Kingdom or Australia, the results of this are reflected where these countries' health systems, where the public enjoy free-publicly funded medical care, according to Cheng, (2010). However, in Kenya, health care financing in in public hospitals mainly comes from the exchequer, with the users expected to pay a marginal user fee. Public sources of funding play a major role in these hospitals, and goes into meeting the costs of healthcare personnel, facilities, equipment and consumables. In the private sector, costs are mainly borne by the clients through out-of-pocket expenditures by households, or through the insurance policies one has subscribed to. Private household expenditures, which are borne by the individuals directly, cater for costs of treatment in form of fees levied at the point of service access, which may be at the either at the government run health institution or private clinics, or could as well be costs of purchase of drugs in pharmacies at the hospitals or privately operated drug stores.

In healthcare industry, patients' encounters play a crucial role in the assessment of the type of health services provided by a facility (Wanjau, Muiruri & Ayodo, 2012). Patients may rate services as improved or better given the circumstances or conditions in which it has been provided. Tam (2005) asserts that improved healthcare may comprise of advanced equipment, latest types of medicines, higher patient-staff ratio, level of costs as well as , efficient and effective delivery of care. In relation to this, Boshoff and Gray (2004) describe client's perceptions of practical aspects which they experience and encounter during the hospital visits; and which may comprise of the physical facility, the process, and the manner in which the health workers interact with them.

The public health system in Kenya has for long been characterized by a persistent inadequacies relating to staffing (all cadres), and also shortage of essential drugs. This disenfranchises those seeking healthcare services in these institutions (Mwabu, Mwanzia

& Liambila, 1993). Improved and timely health service delivery is also a key concern to patients and policymakers in the wellness industry. Improved provision of services in the health institutions as well as by the health workers would result in greater impact of the health systems in general (Dranove & Satterthwaite, 2000; Gaynor, 2006).

In designing ideal services to be delivered, it is theorized that consumers demand for healthcare is driven by the considerations of the service as a consumption commodity which directly enters their preference functions. When a person is sick, then their days lead to disutility. This is in line with Grossman (1972) which is the standard theory to study health and health determinants. Thus, supply and demand related factors influence the health services market. Palsa, Spence and Soneye (2011) state that the kind of healthcare services provided by private health care institutions are often regarded as better than those offered in public hospitals. There is little research available on the issue of healthcare service provision in private hospitals in the developing states despite the evidently higher private costs for users. According to Shekelle, Pronovost and Wachter (2011) efforts to improve healthcare services in the developing countries is mostly inconsistent with patchy results.

Stevens and Staley (2006) propose that to realize improved care, health workers need to identify errors and hazards in care. To do this, they have to exhibit an understanding and have the capacity to implement measures such as designing standard and simple principles that govern service provision. Further, health workers should continually assess and review the process of delivery of care in their health facilities in relation to factors such as standard procedures and outcomes of their clients' needs in their target markets. They should further focus on designing and testing the various interventions so as to institute the necessary changes and systems of care (Greenhaigh, 2000). Often, healthcare is provided by numerous health professionals in practices across many divergent departments. While small private healthcare clinics may be easier to run, larger hospitals with multiple departments and thousands of staff present challenges in relation to effective clinical governance.

### **1.1.2 Overview of health system in Kenya**

The Vision 2030 is a long-term strategic plan intended to guide Kenya towards the achievement of the stated goal to create “a globally competitive and prosperous country with a high quality of life by 2030.” The vision 2030 included the component of healthcare in view of the need to address the livelihood of the population through the development of an efficient integrated and high quality affordable health care system. The strategy aims at prioritization of access to healthcare both at the household level, and at the community level. This is intended to be achieved through the decentralization of the health-care system at the national level through devolution mechanisms.

The Kenyan government has intervened in the health care markets by way of direct provision of services through devolution of health and regulation through Public Health Acts that govern both the public and private health sectors (MoH, 2015). Health care improvement initiatives can only be effective when they are based on sound evidence (Gillam & Siriwardena, 2014). However, for these to be realized, the interventions that the improvement initiative seeks to implement should have evidence of benefit. The country also aspires to achieve the status of a regional provider of choice for highly-specialized health care. It is hoped that this would be achieved by way of promoting “health tourism”. The private sector health providers are considered as an important variable in this, where among the actions outlined in order to achieve improved access to health care, is promoting of partnerships with the private sector. The other sets of actions outlined comprise of the provision of a robust health infrastructure network countrywide; raising the quality of health service delivery to the highest standards; and lastly provision of access to those excluded from health care for financial or other reasons.

At the international level, interventions such as the Sustainable Development Goals (SDGs) launched by the United Nations (UN) in 2015, and the Millennium Development goals are intended to address a range of development needs across the world, and propose interventions in the health sector. However, the Kenya National Health Accounts, 2013 suggests that development programmes in the health sector shows have previously shown that although there are possibilities of delivering interventions vertically, utilizing and



scaling-up interventions in the health sector may not be feasible in the absence of an effective structure or system of healthcare in the country. In Kenya, there is a total of 4,421 health facilities (500 hospitals, 611 health centers and 3,310 sub-centers/dispensaries). Of these facilities, the government is the largest provider of health care (Kenya National Health Accounts, 2013). This means that each health facility serves 6,887 people, while the hospital to population ratio is 1:60,000. There are 57,208 registered medical personnel. The ratio of medical personnel to 100,000 people is 188.2. Only 25% of Kenyans have access to health facilities within a distance of 5 Kilometers. Health expenditure in rural areas account for 30% of the government spending on health while urban areas account for 70%, yet only 20% of Kenyans live in urban areas (KHHEUS, 2013).

### **1.1.3 Health care seeking behavior of populations**

Different studies have examined some of the factors that influence the decisions on choice of private or public health care service provider, as well as decision making in relation to taking out health insurance policies. The most commonly studied factors that are considered to influence such decisions are the costs of the services and the aspect of efficiency in relation to access to services in either institution. However, this comparison may not be easy to draw because the costs of healthcare in the public sector are never clearly stipulated in terms of what the user fees are across all hospitals for the services offered. Lindsay & Feigenbaum (1984) explain that in the absence of explicit monetary prices for public health care, the cost of waiting on waiting lists perform the rationing role that market prices traditionally play and the expected duration of wait influences individuals' decisions to join waiting lists. Cullis & Jones (1986) on the other hand note that in making decisions where there is an alternative to the public health care, those who require these services may consider the cost of having to wait for their turn on the waiting list against the backdrop of what it would cost to access private health care services.

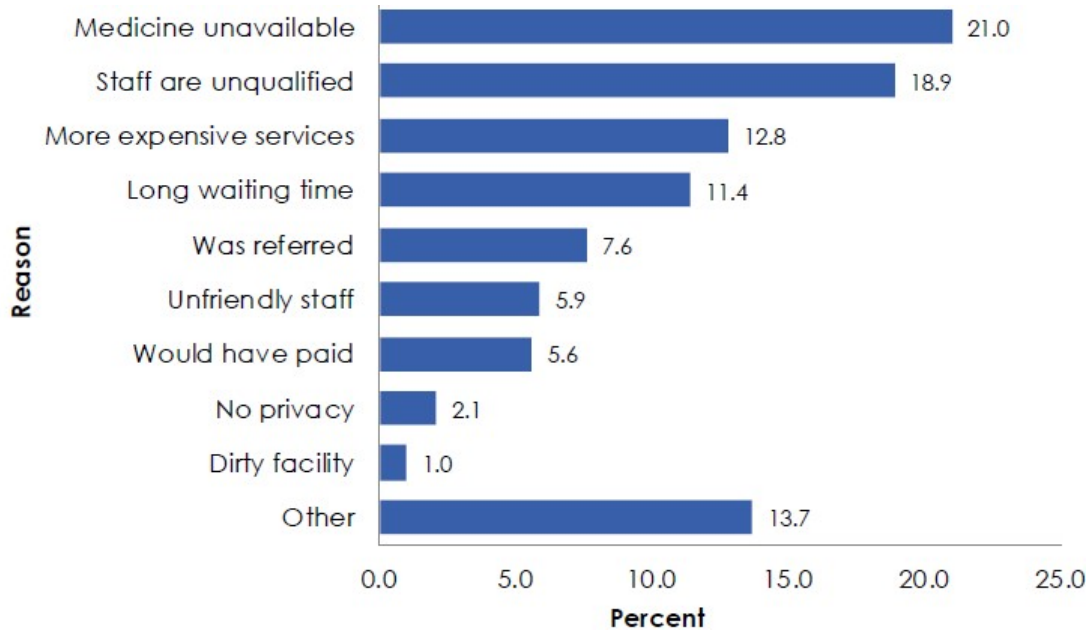
A study by Martin and Smith (1999) sought to use ward level data from the UK National Health Service (NHS) to establish the determinants of demand and supply for elective surgery; while studies conducted by McAvinchey and Yannopoulos (1993) showed that lower expenditures on public health care were related to higher NHS waiting times, while

lower private medical insurance premiums correlated with Private health insurance which subsequently promoted a higher demand in private health care services. Another study by Srivastava and Zhao (2008) investigating demand for private hospital services in Australia established that those people who had subscribed to private health insurance had a higher likelihood of seeking hospital services in the private hospitals. A study conducted in Jamaica made similar findings, showing that access to private health insurance led to a rise in preference for preventative or curative private health care by many people (Gertler and Strum, (1997), as well as a shift from the public institutions. Found that individuals with private health insurance switch from public to private providers for both curative and preventive care in Jamaica. Another study on choice of private or public hospitals by consumers conducted by Propper (2000) concluded that individuals are often consistent in the choice of hospital over time.

Kenya's healthcare system has been characterized by extensive public sector components, complimented by the private sector comprised of private hospitals and independent medical practitioners' clinics as well as Faith-based healthcare providers. Unfortunately, health services in government funded hospitals has been criticized as being sub-standard due to inadequate, or total lack of medical supplies. The KHHEUS (2013) reported that the annual appropriation for the health sector was about Shs. 24.4 billion, out of which ten percent or went to the purchase of drugs. The report further added that there was a notable decline in per capita expenditure in the health sector since independence up to early 2000s. Access and use of the health facilities showed significant declines on account of possible costs of health care, poverty and inability to raise the fees levied for service access. Despite the tremendous growth and expansion of quality improvement initiatives including the increase of number of health facilities due to devolution few studies have been undertaken on the strategies of consistent health service improvement and consequent demand in healthcare provision across a variety of settings (Gillam and Siriwardena, 2014).

The KHHEUS (2013) survey also observed that other health facilities that were nearer residents were bypassed for other institutions that were a longer distance away from them. The report concludes that bypassing the nearby health providers indicated that the

healthcare consumers doubted the quality of service in these institutions. It was further concluded that at times, the poor would prefer to avoid seeking healthcare in public facilities where services have been subsidized by the government seek alternative facilities to access the needed care, at higher costs. Figure 1.1 summarises the reasons why patients bypassed the health care facilities.’



**Figure 1.1: Distribution of the Reasons for Bypassing the Nearest Outpatient Health Provider**

The Figure 1.1 shows that bypassing of the nearest health care facilities was mainly driven by the desire for perceived better quality healthcare, with approximately 21 percent of the respondents indicating that lack of drugs was the main reason for their choice. Other reasons contributing to the bypassing of health facilities which were closer to them were lack of qualified staff, more expensive services (12.8%) and extended periods of waiting.. The report concludes that bypassing those facilities that were closer for others which were away reflected the demand for health services regarded as better suited or adapted to a user household’s requirements as well as the capacity to afford the related costs of services (KHHEUS, 2013).

In Kenya, the health care delivery system is faced with two major challenges which includes accessibility and affordability. Table 1.1 indicates reasons why many patients fail to seek medical treatment despite being ill. According to the recent report of KHHEUS (2014), a survey on the reasons why some individuals never sought for care in hospitals despite cases of ill health, reported the reasons as including the perceived high cost of care, decisions to resort to self-medication, the length of distances to providers and feelings that the ailment was not considered serious enough to warrant a visit to the hospital. Despite these factors being important, it is necessary to comprehend the fact that health care providers may have a degree of impact on the level of satisfaction, choice or even utilization among clients, among others in comparison to issues of accessibility and prices (Andaleeb, 2001).

## **1.2 Statement of the Problem**

The overarching aim of the Kenya Health Policy (2014–2030) is “to attain the highest possible standard of health in a responsive manner.” Achievement of good health status is a critical component of the social and economic development (Kaija and Okwi, 2004). Improving the utilization of health care services in rural areas has positive benefits to the country through increased productivity and income. The Kenya Health Policy Framework (1994-2010) identified a framework for sector coordination and partnership which was established in 2006 with the formalization of the Kenya Health Sector-wide Approach (SWAp) process. While little government support in health service delivery was given to the Private sector health facilities, the providers accounted for 17.9% of all hospital admissions in 2007 - 2014.

While public hospitals are expected to meet the unique needs of the populations in their environments, patients have a choice between seeking services in the public hospitals or those of private healthcare institutions. Private healthcare providers contribute significantly to the efforts of the government in facilitating equity and access to healthcare services. The demand for health services in the private healthcare institutions continues to rise, despite the devolution of health services to the Counties as stipulated by the Constitution of Kenya (2010). The choice of healthcare providers by the clients is

dependent on what matters most to them: location, cost considerations, infrastructure availability, suggestion from friends and referral by doctors, among others (Singh & Shah, 2011). This study therefore intended to find out the determinants of demand for healthcare services in private hospitals in Kenya.

### **1.3 Objective of the Study**

The general objective of the study was to establish the determinants of demand for healthcare services in private hospitals in Kenya.

### **1.4 Research Questions**

- i. What are the determinants of demand for healthcare services in private hospitals in Kenya?
- ii. What are the policy recommendations related to demand for healthcare services in private hospitals?

### **1.5 Specific Objectives**

- i. To establish the determinants of demand for healthcare services in private hospitals in Kenya.
- ii. To offer policy recommendations based on determinants of demand for healthcare services in private hospitals.

### **1.6 Justification of the study**

Health systems- public and private- are a functional network of healthcare providers, including those who bear the costs (households, insurers and other sponsors), including management and regulators. These entities should always act in tandem to address the health needs of households or individual members of the identified social grouping. The policy environment in Kenya continues to focus on enhancing provision of affordable and superior health care services through reduced cost of access to health care. In spite of various health sector reforms in Kenya such as devolution of health services aimed at increasing penetration and access of publicly funded secondary health services in Kenya, there is consistent growth in the demand for private healthcare services. The private

sector contributes more than 40% of health services in the country, which is a significant proportion, providing mainly curative health services. This made it necessary to establish the determinants of demand for healthcare services. This study discussed various determinants of demand for healthcare in private hospitals in Kenya, which would help those in policy making roles, those managing healthcare institutions as well as practicing physicians to establish the reasons why a growing number of patients are drawn to private hospitals. In addition, this study would also assist managers and planners to innovate effective interventions to enhance better care and attractiveness of the publicly funded health sector. Finally, the study results would also contribute to the existing literature on demand for health care in private hospitals.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

Hospitals are economic institutions with key social roles. Hospitals are components of the healthcare systems that utilize on human, technical and physical capital as well as a major proportion of healthcare budgets in many countries. A number of theories reviewed below postulate that demand for healthcare services is determined by both socioeconomic, environmental and demographic factors. This section presents a review of theoretical and related literature. Finally, summary of the literature and gaps to be filled is provided.

### **2.2 Theoretical Literature Review**

Healthcare systems are increasingly becoming more complex, thereby impacting healthcare providers' ability to provide high-quality health care with consequent decrease in demand for specialized care. Bertch (2012) suggests that care can be identified and measured using a variety of methods such as underuse, misuse, and overuse of healthcare resources, adverse drug events, healthcare acquired infections, and medical errors. However, according to Belay (2013) the perception of health care need includes the individual's perception of the usefulness of modern medical treatment, the severity of illness, and the quality of health care providers.

The need for health care may be influenced by the education and cultural belief of individuals and households (Tesfaye, 2003). Among healthcare service providers, quality of service is considered to be an important factor in determination of choice of healthcare provider. A healthcare service provider might also increase demand for their services by seeking to attract new clients. They may also try to increase this by enhancing their care provision to their already existing clientele (Belay, 2013). Inexperienced staff or inadequate staffing and insufficient supply of drugs in health facilities may hinder service provision, even when these are priced affordably. According to Kasirye et al. (2004), healthcare institutions globally have been innovating on ways of refining health care and increasing the efficiency of operations as well as cutting cost of healthcare services using

a variety of improvement strategies. The following are some of the reviewed theories on demand for health.

### **2.2.1 Andersen's Health Behavior Model**

The estimates of demand for health care vary widely, especially when health care is disaggregated by types of services. According to Ringel et al., (2002) some of the health care demand determinants vary according to the types of health care. The authors suggest for necessity in establishing the relationship with healthcare service especially when making choices on the service provider in the health sector. Andersen (1995) developed a Health Behavior Model (HBM) which sought to describe those aspects that determine the utilization of health services. He theorized that utilization of health services is dependent on three dynamics: predisposing factors, enabling factors and need. Predisposing factors are cited to include characteristics such as age, race and health beliefs, while enabling factors comprise family support, health insurance access and one's community. The need factors represent both the actual and perceived need for health care services. The major assumption of this theory is that persons who hold a belief that that health care services provide an effective solution diseases are more likely to seek attention for the healthcare providers of institutions.

### **2.2.2 Young's Choice-Making Model**

Young (1981) conducted an ethnographic study on the use of healthcare service in Mexico, and developed a choice-making model, comprised of four aspects considered to be important when choosing a healthcare provider. This includes the perceptions of gravity; described as an individual's sensitivity and his social network's perception of the extent of the illness. This implies that if the illness is viewed as severe, individuals would tend to utilize health facilities, otherwise they would not. Knowledge of a domestic remedy, one's perception of the effectiveness of the domestic, they will be likely try the treatment before resorting to the formal health care system; belief in the treatment, comprises an individual's confidence in the effectiveness of the remedy in treating their current condition. A person who is ailing is unlikely to use a form of medication when they are doubtful about its effectiveness. In addition, access of



treatment, in relation to one's assessment of the availability and price of health service they require are important variables that may influence health care utilization.

### **2.2.3 Grossman Model of Health Production**

According to Grossman (1999) the demand for healthcare and related service results from the basic demand for health. Individuals demand for healthcare as a consumable because it satisfies their utility directly, due to the fact that that sick days are a source of disutility. He also posited that demand for healthcare as an investment commodity results from the fact that it is a determinant of the total amount of time available for productive work. This implies that individuals inherit an initial health stock that depreciates with age and can be increased by investment. Grossman further observes that the amount of health capital demanded by individuals rises proportionately as the wage rate, whereby the higher a person's wage rate the greater is the value to him of an increase in healthy time, because more healthy time translates to higher earnings thereby making people to invest more in health.

### **2.2.4 Rosenstock's Health Belief Model**

A psychological model that attempts to explain and predict health behaviors of individuals was first proposed by Rosenstock (1995) which was popularly known as the Health Belief Model (HBM) which is. The model focuses on the attitudes and beliefs of individuals, whereby the desirable health seeking behavior is for individuals to respond to a condition of ill health by initially consulting trained healthcare personnel, within formal healthcare settings. Nevertheless, people seek services of traditional doctors, self-medication or services of inexpert practitioners instead of professional healthcare service providers or government health facilities in the event of certain illnesses. Lindelow and Wagstaff (2005) on the other hand suggested that one of the ways in which health outcomes could be measured was assessing client behavior which comprises of care seeking behavior such as use of available healthcare services and adhering to the recommended treatment regime, revisits as well as and honoring referral.

## **2.3 Empirical Literature Review**

Mosadeghrad (2013) investigated factors that determined the excellence of healthcare services to single out improved strategies for quality assurance in the health service

sector. He sought to identify factors that influenced the quality of medical services offered by health workers in Iran. The study found that a range of factors that included environmental, organizational and individual had the effect of promoting or hampering quality of healthcare services and thus demand. On the other hand, he also found that the quality of healthcare services depended on individual characteristics of physicians as well as patients, as well as those related to the healthcare context and its surrounding.

Mureithi (2013) conducted a study on health seeking behavior in urban areas in Kenya. The study indicated that quality of care determined the probability of visiting private hospitals. The author found that the coefficient in private health facility was quite high, suggesting that an increase in services in the private hospitals raises chances of clients seeking their services in comparison to the option of self-treatment. He concluded that quality of the health care in the hospitals may significantly affect the demand for healthcare service.

In an empirical investigation by Wanjau, Muiruri and Ayodo, (2012) at Kenyatta National Hospital revealed that continued enhancement of capacity of staff in could influence the improvement of quality of services; in addition to discouraging ineffective staff recruitment processes, monitoring of doctors and other health workers, ensuring that set performance and practice standards to promote service quality provision are regularly met. This study's conclusions confirmed that the quality of service has a significant effect on the level of satisfaction among the clients visiting the hospital.

Mugilwa *et al*, (2005) made an observation where they found a correlation between increased access to quality health care leads and poverty reduction; as a result of time saving as well as in the development of more productive human capital. Availability of affordable health care is an integral part of the strategies towards poverty reduction, as envisaged in the Poverty Reduction Strategy Paper (PRSP). Variations in health facilities range from quality of care, to cost and access. People make deliberate choices for their healthcare needs based on factors such as accreditation, referrals, hygiene and communication with health care workers among other aspects.

The demand for quality services has kept rising, leading to improved quality of secondary healthcare services as a key concern for service providers willing to attract and maintain

their clients (Amin et al., 2013). According to Fotiadis and Vassiliadis, (2013), satisfaction with health services is often a factor of concrete and discrete variables. Tangible elements include the adequacy of infrastructure and equipment such as bed capacity, surgical equipment and even a range of drugs; in addition to the competencies of health personnel. On the other hand, intangible factors may include aspects such as unique personal preference, attitudes and experiences, among others.

Woodside et al. (1989) observed that several aspects were responsible for determining levels of patient satisfaction. In addition to technical services, these were found to include admission and discharge processes, kind of nursing care given, kind and variety of foods, state of housekeeping services. Ware et al. (1978) on their part identified factors that were considered to be most important to patients when asked to evaluate the quality of care. These were said to include the conduct of physicians, availability of services demanded, efficient service provision, degree of confidence, as well as the outcomes. Another study on the same issue conducted by Fowdar (2005) singled out professional credibility and competency of staff, customization of services offered and communication with clients as important dimensions.

Mushtaq, et al., (2011) sought to establish the socio-demographic correlates of the health seeking behaviors in two districts in Pakistan. They included age, gender, education level, occupation of interviewee, family members and approximate family income, housing condition; the socio-demographic factors; and health seeking behavior which included consultation about the disease, frequency of visits to a health facility, and reasons for not using the public health services. They found that the main reasons why individuals did not utilize services of public health facilities included costs, dissatisfaction with quality of care and transportation difficulties due to distance which had previously been indicated as major utilization constraints.

According to Mahinda's (2013) cross-sectional descriptive study on determinants of self-directed referral of patients at Kenyatta National Hospital (KNH) in Kenya, patterns of patient self-referral at KNH varied according to socioeconomic status, education level and perception of quality of care offered in lower levels of healthcare. Mahinda used chi square test and logistic regression to derive the relationship between the dependent and

independent variables, and found that only 27.7% of patients seeking health services at KNH were self-referrals, with 28.6% of ailments being surgical complications. There was no statistically significant association found between individual factors and self-directed referral. In a related study in Sri Lanka, Akin and Hutchinson (1999) undertook a random effects probit estimation to examine the relationship between individual and facility characteristics. They concluded that individuals make decisions about visiting or not visiting a health facility based on a range of attributes which include facility characteristics, the price of medical consultation, and the number of hours open.

Consumers in many sectors are more aware of their rights, and are often concerned about quality of services offered to them. As a result, organizations across all sectors pay more attention to quality of services to achieve a competitive edge. According to Altuntas, Dereli and Yilmaz (2012), perceptions of the quality of service in an organization can be a significant factor in influencing the dominance and competitiveness of an organization. The world over, hospitals are seeking innovative ways of improving their processes by adopting quality improvement strategies. These efforts have resulted in quality improvement programs and initiatives unique to health care settings or borrowed from other sectors in industry (Shortell et al, 1995).

In the healthcare industry, quality infuses all aspects of an organization's work. Private health facilities are profit motivated so that there is a focus on improving service quality to attract patients. This is in line with the studies conducted by Sahn et al (2003) in Tanzania, Mwabu et al. (1993) in Kenya, and Ellis et al. (1994) in Egypt who also found that medical quality, assessed in terms of both health staff qualifications and by the availability of drugs increases the probability of a visit to both private clinics and public hospitals.

Gillam and Siriwardena (2014) identify two main considerations relating to quality improvement interventions. They state that first, the intervention or interventions that the quality improvement initiative seeks to implement should have evidence of benefit and sound evidence of what works. They should lead to improvements in patient outcomes that are, ideally, both clinically important and cost-effective. They further state that evidence that translates basic research into its clinical application through new health

technologies (either products or approaches) has been termed the ‘first translational gap’. Secondly, Cooksey, (2006) observed that quality improvement initiatives should be based on sound evidence of what works to implement these products or approaches. This is the ‘second translational gap’, which forms the basis of quality improvement and implementation science.

McKay and Crippen (2008) assessed the Donabedian’s structure-process-outcome model as a framework for entrenching best practice necessary for multidisciplinary partnership in acute care settings, and developed a care model that purposefully wove collaboration into structure and process to effect change in organizational outcomes. According to the researchers, their Clinical Integration Model improved patient outcomes as evidenced by the average length of stay decreasing by 0.87 days without a significant change in case-mix index, and the cost per admission dropped by \$804.00 over a year. The implication of this finding is that it is possible to focus on quality healthcare provision and in the process reduce the overall costs of healthcare.

Mwabu et al (1993) explored the effects of the quality of healthcare care on the access and use of medical facilities in Kenya using the data from Meru district. The study revealed that when the drugs are available, the demand increases. On the other hand, increase in income was also found out to affect demand for medical care positively, with a shift from informal health care to formal healthcare where majority of these end up at private or mission health facilities. According to the findings of the study user fees and distance reduce demand for healthcare though insignificantly. The authors concluded that shortages in particular types of drugs may be either negatively or positively related to demand for medical care.

## **2.4 Overview of literature review**

Based on both theoretical and empirical examination, many factors are attributed to demand for healthcare services. The choice healthcare service provider is a function of many factors including quality, affordability and accessibility. These factors are also related to characteristics of the health staff, patients themselves as well as environmental and social influences. A range of factors also influences the level of satisfaction among clients and subsequently affects the use of medical services demanded as well the choice

of that particular health care provider(s) by individuals (Mugilwa *et al*, 2005; Mushtaq, et al., 2011; Altuntas, Dereli and Yilmaz, 2012; Wanjau, Muiruri and Ayodo, 2012; Mahinda's, 2013; Mureithi, 2013; Mosadeghrad, 2013; Kemp et al., 2014). Physician characteristics are identified as including the age of the physician, personal dispositions, level of education, their capability as well as years of experience. This study will therefore estimate the binary model of provider health care using the recent Kenya Household Health Expenditure and Utilization Survey (KHHEUS, 2013).

## CHAPTER THREE: METHODOLOGY

### 3.1 Introduction

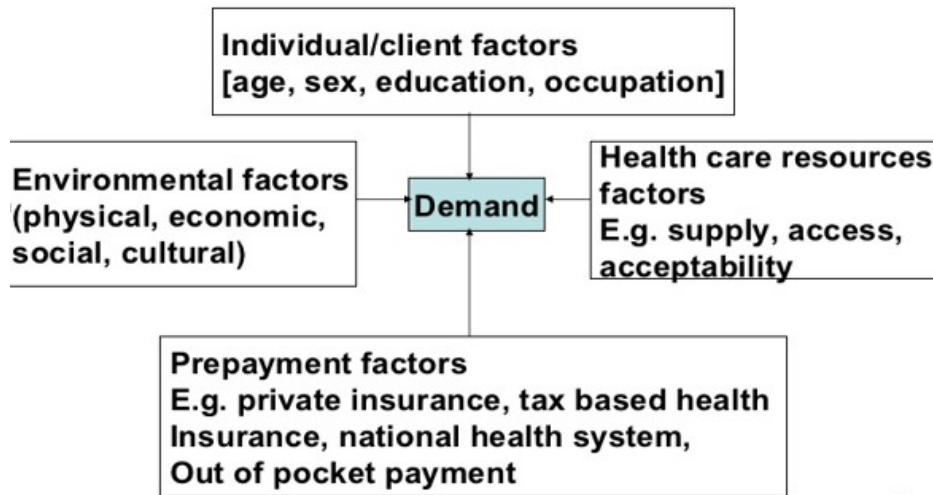
This chapter presents the theoretical, data types and source to be used in this study.

### 3.2 Theoretical Framework

People desire good health, hence the demand for health care services which contributes only into an input into the production of health, and the level of demand for health care services is determined by the extent to which the individuals will get their preference or their desires satisfied. The idea that health care is not a direct but derived good was first discussed by Grossman (1972). In Grossman model, health is demanded for consumption and investment purposes. As a consumption good, health care enters directly into the consumer's utility function.

The individual derives utility from consumption of both health goods and non-health goods. Thus, utility can be specified as a function of the quantity of medical care. However, as reviewed in theoretical literature and emphasized by Grossman (2001) and Mosadeghrad (2013), socio-demographic variables such as age, race, education, social class and health status as well as attitudes, and behaviors such as mood, actions and cooperation may have an influence on the level of the utilization medical services positively or negatively. Figure 3.1 below shows the framework of demand for health care services.

**Figure 3.1: A Grossman model of the individual demand for Health care services**



Health as capital commodity, depreciates over time at an increasing rate with age (Tompa, 2002). In case of illness, the individual has to consider the following factors to make a decision in relation to choice of a place of health care. The individual decides where to go based on their social class; second, an individual considers how much time they are willing to wait before being served. The distance to the health facility is also an important element to be considered. Further, the staffing availability, these are qualified medical professionals who will treat them to their preference. They all together contribute to an individual’s choice of the type of health care provider to visit (Gertler and van der Gaag, 1990; Mwabu, 1986; Sahn et al., 2003; and Randall and Mwabu, 2004).

The demand equation can be summarized as follows;

$$H_{dp} = f(P_n, P_{n-1}, Y, T, A, D) \dots \dots \dots 3.1$$

Where:

$H_{dp}$  = Demand for private hospital

$P_n$  = Price of the health services (cost)

$P_{n-1}$  = Prices of health services in other facilities

$Y$  = Individual income – including both the level and distribution of income

$T$  = Tastes and preferences of individuals

$A$  = the level and age-structure of the population

$D$  = Distance to the nearest health facility



However, for us to determine their relationships with demand for health care services from private hospitals, the study employed an econometric model as discussed in sub section 3.3.

### 3.3 Econometric Model Specifications

Based on the theoretical framework, factors that determine demand for private hospital in Kenya are explored by using binary probit regression model which lies on an interval of between 0 and 1. This is a probabilistic distribution from where the probability of either seeking health care services in the event of illness or not from private hospital. An assumption will be made that the error term takes a standard normal distribution. Since we cannot observe the latent variable  $y^*$ , similarly Green, (2008) asserts that we cannot be able to estimate its variance. However, there exists a linear relationship between the unobservable variable  $y^*$  and explanatory variables ( $X_i$ ) represented as:

$$y^* = X_i\beta + \mu \dots\dots\dots 3.2$$

Where  $y^*$  is unobserved/latent variable (probability of seeking health care from private hospital).

$X_i$  is a pool of independent variables (both demographic and socio economic factors among others)

$\beta$  are coefficients to be estimated

$\mu$  is the random error term

From equation 3.2 above unobservable variable  $y^*$  was linked to the observed binary variable  $y$  as expressed below;

$$y = \begin{cases} 1 & \text{if } y^* > k \\ 0 & \text{if } y^* \leq k \end{cases} \dots\dots\dots 3.3$$

Where  $y$  is the probability of seeking care from private hospital, 1 if one uses, that is; sought care from private health facility and 0 if otherwise;  $k$  represents the threshold beyond which one is said to have sought care from a private health facility. Since probit model makes an assumption that the distribution is normal with a mean of zero and a variance of one, the study will estimate the marginal effects in order to interpret the results of the model. This will seek to reflect the change in the probability of experiencing an event that is seeking care from private hospital in Kenya, given a unit change in any of the explanatory variables. In

specifying our model, a general multiple model to explore the relationships will be represented as follows;

$$Y = \beta_s X_s + \varepsilon_i \dots\dots\dots 3.4$$

Where Y is dependent variable (demand for health care from private hospital) as shown in the theoretical framework while Xs are the explanatory variables; Demographic factors, socioeconomic factors among other moderating factors,  $\beta_s$  are the coefficients of the respective independent variables and  $\varepsilon_i$  is the error term.

The specified model is as follows;

$$\text{Demand for private healthcare} = \beta_0 + \beta_1 A + \beta_2 Ed + \beta_3 D + \beta_4 I + \beta_5 Wi + \beta_6 R + \beta_7 Rel + \beta_8 Ai + \varepsilon_i \dots\dots\dots 3.5$$

- Where A- Age
- ED- Education
- D- Distance
- I- Insurance
- Wi- Wealth Index
- R- Residence
- Rel- Religion
- Ai- Access- information

**Definition of the study variables and expected sign**

The study included variables associated to individuals, households and provider specific characteristics to identify and estimate the determinants of demand for quality health care. In the following tables, the dependent variables with the associated explanatory variables are defined.

**Table 3.1 Variable Definition and Measurement**

<b>Variables</b>	<b>Definition</b>	<b>Expected sign</b>
<b>Dependent Variables</b>		
Demand for private health care services	These are the respondents who state the place health care services were sought. The study will code 1 for those visiting private hospital and 0 for those who visiting other facilities	
<b>Explanatory Variables</b>		
Age	Age of the individual in complete years	Positive
Education	Number of years spent in school (school attainment)	Positive
Distance to the nearest health facility	1 for far and 0 for the near	Positive
Insurance coverage	1 if an individual owns insurance, and 0 otherwise	Positive
Wealth index	Poorest=1, poorer=2, middle=3, rich=4 and richest=5	Positive
Place of current residence	Residence= 1 if urban, 0 if rural.	Positive
Religion	1 if one has religion, 0 if no religion	Negative
Access to information	1= If an individual possess Radio/TV or reads newspaper and 0 otherwise	Positive

### **3.4 Diagnostic tests**

#### **3.4.1 Multicollinearity test**

This explores the perfect collinearity of the study variables. The study examined the correlation matrix to establish the relationship between demand for private hospital care and independent variables of the study. The positive and negative signs in the analysis are indicative of the direction of association between variables. Multicollinearity was deemed present if the correlation coefficient was more than half in absolute terms. To confirm existence of Multicollinearity, the study also used Variance of Inflation Factors (VIF) and if present, the researcher dropped one of the collinear variables.

#### **3.4.2 Normality test**

The study conducted a normality check of the distribution of the residuals/error term. The study considered variables not normally distributed when their respective p values was less than 5%. These led to rejection of the null hypothesis for normality of the residuals. This is however expected in such dynamic data sets as the ones used in this study.

#### **3.4.3 Heteroscedasticity test**

Heteroscedasticity implies variation of the residuals across all the observations under study. The study used scatter plots method of residual-square against the fitted values of the dependent variable. Where present, the study applied robust to obtain correct estimates.

### **3.5 Data source and Type**

The study utilized the latest Kenya Household Health Expenditure and Utilization Survey of 2013. This is household-based cross sectional survey data that contains general information on expenditures and utilization of health care services. The study analyzed information on different types of health providers. Specifically, the survey asked questions on where individual sought health care services. Other information which can be obtained includes age, current residence, education levels, insurance ownership, distance, wealth index, access to information among other variables.

## CHAPTER FOUR: RESULTS AND DISCUSSION

### 4.1. Introduction

This chapter presents the study results of the determinants of demand for healthcare services in private hospitals in Kenya. The study used binary probit regression model in estimation. Descriptive and regression results are presented in form of tables and figures.

### 4.2. Descriptive Statistics

The study considered mainly mean, standard deviation, minimum and maximum values of the study variables. As indicated in Table 4.1 below, a total of 33, 675 individuals were surveyed. Specifically, the study considered place where health care was sought that is private health care as the dependent variable while age, educational attainment, ownership of health insurance, distance to nearest health facility, place of current residence, religion, wealth index and access to information as independent variables. From the findings, approximately 54.38% of the respondents were reported to demand for private health care with a closely higher variation of 49.8% however less than the mean value implying absence of outliers.

**Table 4.1: Summary Statistics**

Variable	Observation	Mean	Std. Dev.	Min	Max
Demand for Private Hospital Care (PHC)	16135	0.5437868	0.4980945	0	1
Age	33675	29.34114	10.32731	15	98
No education	33675	0.1322049	0.3387184	0	1
Primary education	33675	0.504588	0.4999864	0	1
Secondary education	33675	0.2777431	0.4478927	0	1
Higher education	33675	0.085464	0.2795751	0	1
Distance	33675	0.3978619	0.4894639	0	1
Health insurance coverage	15974	0.1503694	0.3574443	0	1
Wealth index	33675	2.908834	1.435474	1	5
Place of Residence	33675	0.365761	0.48165	0	1
Religion	33559	0.9839983	0.1254834	0	1
Mass Media	33675	0.8292205	0.3763218	0	1

Respondents had approximately 29 years on average with the youngest being 15 years while the oldest was 98 years. The variation in general was little at 10 years. On education attainment, the study showed that about 13.22% had no any education at all while 50.46% had primary level of education. About 27.77% had secondary while 8.54% had higher education level. Most respondents (60.21%) reported to be near the closest health facilities whereas 39.79% felt like the distance to nearest health facility was far. The results also

revealed that 36.58% of the respondents reside in the urban areas while a huge population of 63.42% are rural residents. Further, respondents with no religion were only 1.6% whereas those who were Christians, Muslims and other faiths were 98.4% of the surveyed population. On wealth index, majority of the respondents were in the first and second wealth quintiles. Finally, majority of the respondents (82.92%) were found to access either radio, TV or read newspaper frequently and thus health information.

### **4.3 Diagnostic tests**

#### **4.3.1 Multicollinearity test**

Correlation matrix was undertaken to establish the relationship between demand for private hospital care and independent variables of the study. The positive and negative signs in the analysis are indicative of the direction of association between variables. From table 4.2, demand for private hospital care was only found to be negatively correlated with distance to nearest health facility while having a positive correlation with other variables. However, education attainment, distance to nearest health facility, health insurance coverage, wealth index region, religion and mass media had a significant association with demand for private hospital care whereas age was not significantly correlated at 5% level. Considering the degree of association, most correlation coefficients were not highly (above 70%) correlated with each other (Machio, 2008). High correlations contribute to multicollinearity which ultimately provides wrong estimates. Other significant correlations are as indicated in table 4.2.

**Table 4.2: Correlation matrix**

Variables	Demand for Private Hospital Care (PHC)	Age	Education	Distance	Health insurance coverage	Wealth index	Place of Residence	Religion	Mass Media
Demand for Private Hospital Care (PHC)	1.0000								
Age	0.0129	1.0000							
Education	0.1933*	-0.1099*	1.0000						
Distance	-0.0965*	-0.2400*	-0.0061	1.0000					
Health insurance coverage	0.1492*	0.1311*	0.3178*	-0.1151*	1.0000				
Wealth index	0.2121*	0.0335*	0.5126*	-0.0945*	0.3262*	1.0000			
Place of Residence	0.1231*	-0.0067	0.2266*	-0.0707*	0.1381*	0.4802*	1.0000		
Religion	0.0502*	-0.0206*	0.1141*	-0.0001	0.0494*	0.1151*	0.0510*	1.0000	
Mass Media	0.1530*	-0.0313*	0.4079*	-0.0459*	0.1597*	0.4353*	0.1642*	0.1154*	1.0000

\*Significant correlations at 5% level.

To confirm existence of Multicollinearity, the study computed Variance of Inflation Factors (VIF). The recommended threshold is a VIF of 10 with a tolerance value of not less than 0.1. The results are in table 4.3.

**Table 4.3: Variance Inflation Factors**

Variable	VIF	VIF2
Religion	15.17	8.07
Age	14.46	3.68
Wealth Index	8.94	8.83
Mass Media	5.96	5.95
Education	5.22	5.22
Place of residence	2.03	2.02
Distance	1.74	1.58
Health insurance coverage	1.41	1.41
Mean VIF	6.87	4.59

From the VIF test, it is confirmed that religion and age had values above the threshold implying existence of multicollinearity. To address this, the study squared age (VIF2) to make it non-linear. Since all the values in VIF2 were less than the recommended threshold of 10 Nachtsheim, et. al, 2004. Multicollinearity was thus deemed absent.

### 4.3.2 Normality test

The study undertook a normality check of the distribution of the residuals/error term. Table 4.4 indicates the results.

**Table 4.4: Shapiro Wilk test of normality**

Variable	Observations	W	z	Prob>z
Residuals	15927	0.98838	12.066	0.00000

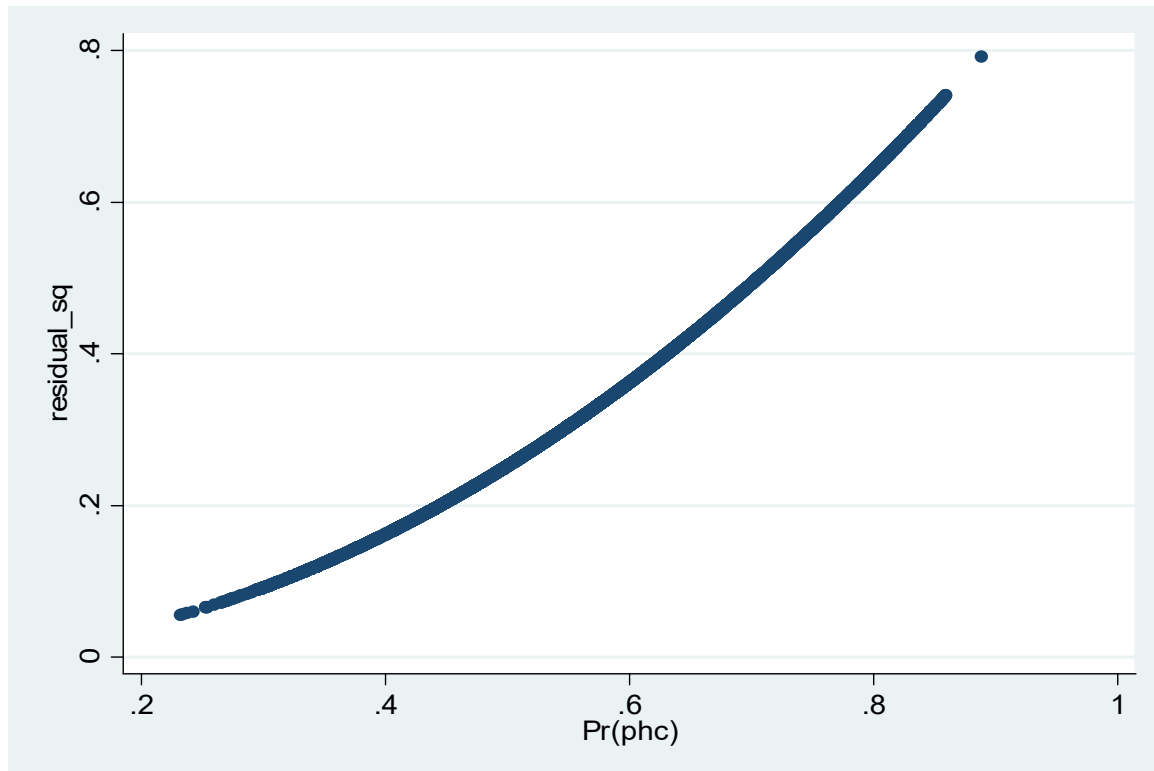
The results show that the data used was not normally distributed since the p value was less than 5% level hence led to rejection of the null hypothesis of normality of the residuals. This is however expected in such dynamic data sets as the one utilized in this study (Awiti, 2013).

### 4.3.3 Heteroscedasticity Test

Heteroscedasticity implies variation of the residuals across all the observations under study. We used the method of scatter plots for residual-square against the fitted values of the demand for Private Hospital Care (PHC). The results are as shown in Figure 4.1.



**Figure 4.1 : A graph of Residual Square against predicted value of private hospital care demand**



From figure 4.1, it was revealed that the plot exhibited a systematic pattern which implied that there was constant variance as expected. Therefore there is no heteroscedasticity. Having confirmed and addressed various diagnostic test, the next section undertakes econometric estimation to determine the effects of respective factors on demand for private hospital care in Kenya.

#### **4.4. Regression Results**

##### **4.4.1. Introduction**

The study estimated the probit indexes and respective marginal effects to elucidate the categorical role of each factor considered on demand for private care in Kenya. Findings are as shown in Table 4.5. From the regression results, study found a p value of 0.0000 which was less than 1% level of significance and with the log likelihood ratio of 5068.7 suggesting that factors considered fit the model well hence variables used in the model were jointly significant in explaining demand for private care in Kenya. However, the pseudo R was very low at 4.82% which according to Awiti, (2013) and Achieng, (2014) is normal for studies of

this nature<sup>1</sup>. Table 4.5 below indicates more other details of the coefficients for marginal effects of the probit model of various determinants.

**Table 4.5: Probit indexes and Marginal Effects (Dependent variable - Demand for private hospital care)**

Probit regression		Number of observations = 7738			Marginal effects		
LR chi2(11) =		513.07					
Prob > chi2 =		0.0000					
Log likelihood =		-5068.6635					
Pseudo R2 =		0.0482					
Probit results							
Demand for private hospital care	Coefficients	t-statistics	P value	Coefficient	t-statistics	P value	
Age	0.0000644 (0.000026)	2.48	0.013	0.0000242** (9.74e-06)	2.48	0.013	
Education	0.1522965 (0.0239362)	6.36	0.000	0.0571309*** (0.0089075)	6.41	0.000	
Distance	-0.1741209 (0.0419344)	-4.15	0.000	-0.0653179*** (0.0156778)	-4.17	0.000	
Health insurance coverage	0.2696543 (0.048253)	5.59	0.000	0.1011553*** (0.0179949)	5.62	0.000	
Wealth Index/quintiles (Reference Category- Poorest Wealth Quintile)							
Poorer	0.0829124 (0.044778)	1.85	0.064	0.0321215* (0.0173842)	1.85	0.065	
Middle	0.1558311 (0.0482876)	3.23	0.001	0.0602166*** (0.0187278)	3.22	0.001	
Richer	0.2030447 (0.0530476)	3.83	0.000	0.0782614*** (0.0205463)	3.81	0.000	
Richest	0.3894017 (0.0640654)	6.08	0.000	0.1475963*** (0.0241607)	6.11	0.000	
Place of residence	0.0998494 (0.0361646)	2.76	0.006	0.0374565*** (0.0135462)	2.77	0.006	
Religion	0.2003841 (0.0944155)	2.12	0.034	0.07517** (0.0353866)	2.12	0.034	
Access to Mass Media	0.0741647 (0.0409538)	1.81	0.070	0.0278214* (0.0153528)	1.81	0.070	
Constant	-0.5305786 (0.097082)	-5.47	0.000	-	-	-	

\*\*\*Significant at 1%, \*\*Significant at 5% and \*Significant at 10%. (standard errors in parenthesis)

From the results; the coefficients for age, educational attainment, distance to nearest health facility, ownership of health insurance, wealth quintiles (poorer, middle, richer and richest), place of current residence, religion and access to mass media were found to be statistically significant at different levels in determining demand for private hospital care in Kenya. Apart from the coefficients for distance to the health facility which had a significant negative effect, the coefficients for other variables had a positive and statistical significant relationship to demand for private hospital care.

On the other hand, only the coefficient of access to mass media was significant at 10% level while age of an individual and religion attained significance at 5% level. This implies that mass media was weakly associated with the probability of demanding for private hospital care in Kenya. The other remaining variables had significant coefficients of 1% level implying they were highly significant in determining demand for private hospital care.

#### **4.4.2 Discussion of the results**

The study ensues the discussion of the results of the marginal effects. From the findings, the coefficient for age was statistically significant. At 5% significance level, the study revealed that an additional year increased the probability of demand for private hospital care by 0.0024% holding other factors constant. This means that as one gets older, the likelihood of using private health facility is high. This may be associated with either improved quality care, economic status or factors associated with bypassing hospitals. This finding confirms the results obtained by Muriithi (2013) on health seeking behaviour in urban areas in Kenya. The author concluded that quality of care determined the probability of visiting private hospitals. The study indicated that the quality of the health care has a statistically significant impact on demand for private hospital care.

On the coefficient of educational attainment, the study found that at 1% level of significance, an extra level of education led to a statistical significance increase in probability of demanding private hospital care by 5.71% at *ceteris paribus*. This implies that as one advances academically, he/she tends to associate with better quality of care perceived to be offered at the private health facilities. The study however conflicts with findings of Mahinda's (2013) who found education to be statistically insignificant.

The coefficient of distance to the nearest health facility was also found to significantly lower the probability of demanding private hospital at 1% level by 6.53% holding other factors

constant. This means that the more one is far from private health facility the less he/she is likely to demand for the care. The findings are in tandem with the study results of Mushtaq, et al., (2011) who sought to establish the socio-demographic correlates of the health seeking behaviours in two districts in Pakistan. The author also established that transportation difficulties due to distance was indicated as major utilization constraints. However, the study results were contrary to the findings of Mwabu et al (1993) who found that despite distance reducing demand for healthcare, it was not significant in determining demand for medical care in Meru district, Kenya.

The coefficient of health insurance coverage was shown to significantly increase private hospital care demand from private hospitals at 1% level of significance by 10.11% holding other factors constant. This implies that health insurance ownership eases the cost burden of consuming health services and thus demand for more of such from private hospitals. The study confirmed the finding of Bobinski (2007) who showed health insurance participation raised use of health care in Canada.

Among the socio economic factors, the study considered the wealth index in levels and found out that compared to poorest wealth quintile, the coefficients of all other four wealth quintiles were found to be statistically significant in influencing demand for private hospital care. In this case, the coefficient of poor wealth quintile indicated that for individuals in poorer wealth quintile, the probability of demand for private hospital care increases at 10% level of significance by 3.21% holding other factors constant compared to those who were in the poorest wealth quintile. Also the respondents who were in the middle wealth quintiles had a significant coefficient of 0.0602 implying that being in the middle wealth quintile compared to poorest wealth level led to a 6.02% increase in the probability of demand for private hospital care holding other factors constant. The coefficient of the richer wealth quintile significantly increased the probability of demand for private hospital care at 1% level by 0.0782614 implying approximately 7.83%. Similarly, those respondents who were mostly in the richest or the fifth wealth quintile led to a probability rise of the demand for private health centre. Generally, a change from lower wealth level to higher wealth level leads to a significant probability increase in demand for private hospital care holding other factors constant. This may be attributable to individuals in higher wealth cadres being more concerned about their well-being and able to cater for the high costs associated with health care offered at private hospital. The study confirms the findings of Mwabu et al (1993) who revealed that increase in income affected demand for medical care positively, with a shift

from informal health care to formal healthcare where majority of these end up at private or mission health facilities.

Also the study sought to apprehend the role of current place of residence with regard to usage of private hospital care. The coefficient for current place of residence was found to be significant. Residing in urban areas was shown to significantly increase the probability of utilizing private hospitals by 3.75% holding other factors constant as compared to residing in rural areas. Urban residence is associated with ease of access to information and transport among other factors. Perhaps this can confirm the fact that health expenditure in rural areas accounting for 30% of the government spending on health while urban areas account for 70%, yet only 20% of Kenyans live in urban areas (KHHEUS, 2013).

The study revealed that the coefficient for religion increased demand for private hospital care at 5% level of significance by 7.52% holding other factors constant. This may be attributed to increased advertisements in these institutions regarding the specific health facilities either for communal/common or individual reasons. Finally, the coefficient for mass media was positive and statistically significant. The study indicated that individuals with access to health information through mass media had high likelihood of increased demand for private hospital care at 10% level of significance by 2.78% holding other factors constant. Health information encourages people to consume more of health services some which may mainly be found in private hospitals due increased likelihoodness of availability of medical supplies.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS**

### **5.1 Introduction**

This chapter explores the summary and conclusions of study findings, policy recommendations on determinants of demand for private hospital care in Kenya. Areas to be considered in further studies are also provided.

### **5.2 Summary and Conclusions of the study findings**

The healthcare system in Kenya is extensively described by public sector constituents, substantiated by the private sector characterized by both private hospitals and independent medical practitioners' clinics as well as Faith-based healthcare providers. Unfortunately, improved health care is low particularly in government-run facilities because of lack of supplies/stocks. This has led to huge influx in private hospitals. Based on this, the study pursued determinants behind utilization of private hospital care in Kenya. Kenya Household Health Expenditure and Utilization Survey of 2013 which contains factors associated with utilization of hospital care in different facilities was employed. In estimating the econometric model, the study adapted the probit regression model since the dependent variable was binary in nature and its robustness of the model.

The dependent variable used was demand for private hospital care while the independent variables used include: age, educational attainment, ownership of health insurance, distance to nearest health facility, wealth index, place of current residence, religion and access to information. From probit regression model, the coefficients for age, educational attainment, distance to nearest health facility, ownership of health insurance, wealth index (through the four wealth quintiles against the first wealth quintile), place of current residence, religion and access to mass media were found to be statistically significant at different levels in determining demand for private hospital care in Kenya. Apart from distance to the health facility whose coefficient had a significant negative effect, the coefficients for other factors had a positive and statistical significance on demand for

private hospital care. The study concludes that both demographic and socioeconomic factors are significant in determining demand for private hospital care.

### **5.3. Policy Recommendations**

There is need to develop and implement policies targeting individuals in all age groups and higher wealth cadres. As from the study, movement from lower wealth quintiles towards higher wealth quintiles is associated with increase in demand for private hospital care. Similarly, there is need to conduct workshops among the population to inform them on their right to obtain better and quality care which is subsidized at public hospital. This kind of awareness would lead to increase use of health care at public hospitals and decongest overwhelmed private hospitals. Also there is a necessity of the government incorporate at private hospital its subsidy program to lower cost of accessing care as this would maintain and lead to increased utilization of services. Individuals especially in low income groups would also have opportunities to access the services.

The governments need to establish more health facilities and improve accessibility to health facilities in both urban and rural areas. This will maintain and even increase the rate of utilization of these services. This is because urban residence was associated with significant higher utilization of these services compared to rural areas. Finally the government need to establish the correct information including other health campaigns to pass information to the general public through the media, religious institutions, as access to media and having religion were associated with increased use of the private hospital care.

### **5.4. Areas of further study**

The study has mainly considered factors determining demand for private hospital care in Kenya. The cross sectional data set with several socio demographic factors considered in the study, however, other factors such as marital status, empowerment, gender of household head were not considered among others. Therefore there is need to include these factors in other future studies. Finally there is need to consider comparative study on factors that determine demand for hospital care using datasets over time relating with other independent factors as well as doing an inter county or country studies.

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