DETERMINANTS OF CHOICE FOR HEALTH CARE PROVIDERS IN INFORMAL URBAN SETTLEMENT IN KENYA: A CASE OF KARIOBANGI ESTATE

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DECLARATION

I hereby declare that this is my original work and has not been presented for a degree in any other university

Signed----------

Peter Ndirangu Karimi

APPROVAL BY SUPERVISOR

Date ----------

This project report has been submitted with my approval as University supervisor:

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DEDICATION

I dedicate this project to my family for support during the study. Your encouragement and prayers gave me the strength to persevere.

ACKNOWLEDGEMENT

I would like to first thank the Almighty God for His grace during my studies. His name be praised

My sincere gratitude goes to Dr. Moses Mureiithi for the encouragement, assistance and throughout the research process. We walked together from conceptualization of the idea to writing this report. It is through your encouragement that my focus was renewed and sustained until the end. Let me also thank the entire staff of the School of Economics for the corporation and assistance during the entire period of the studies.

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God bless you all.

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LIST OF ABBREVIATIONS

MNL	Multinomial logit
STATA	Statistics and data
SE	Standard error
VIF	Variance of inflation factors
WHO	World Health Organization

ABSTRACT

Healthcare is a basic human right and people seek services in different places. The determinants of health-seeking behavior range from socioeconomic factors to providers' attributes. Kariobangi area of Nairobi is home to several businesses and people of different sociodemographic characteristics. The residents live in congested polluted environment and are prone to diseases. They are not well endowed and accessibility to quality health services was a challenge. The choice of the providers was dependent on several factors that were not known since no study has been carried out to unearth them. The study objective was to determine these factors that influence the choice of healthcare providers in Kariobangi. A cross-section study design was used, where 301 participants were involved that were selected using systematic random sampling. Data was collected using a questionnaire, cleaned and entered into STATA version 14. Both descriptive and inferential statistics were used to analyze the data. A Multinomial Logit was used to determine the relationship between the choice of health care provider and explanatory variables. Most residents depended on public health facilities for services and were used as the base category. At a 5% level of significance, poor quality of treatment decreased the probability of seeking services by 23%. The negative attitude of healthcare workers decreased it 22%. And participants suffering from communicable diseases had a 14.5% probability of visiting. An additional hour of waiting time enhanced the chances of visiting these facilities by 15.1% at ceteris paribus. There is a need to improve the quality of services in public health facilities by stocking adequate medicines as well as reducing waiting time. This will enhance accessibility of health services to the residents of Kariobangi.

CHAPTER ONE: INTRODUCTION

1.1 Background

The choice of a healthcare provider ids dependent on several factors that can be categorized into patient and provider attributes. Amon the latter includes the severity and nature of the disease, level of education and ability to pay. The health facility attributes encompass distance, affordability, acceptability, and quality of services (Anselmi et al, 2015). The choice is a result of the interplay between all these factors that dictate how actively healthcare services are sought by different people in response to an illness.

The wealth of a nation cannot be accomplished without a healthy workforce. People should be in good health for them to optimally produce goods and services. The human capital is the principal driver for economic growth and development (Howarth, 2012). Low quality and quantity of life are associated with poor health and increased mortality. People require to be free from psychological, social and physical infirmity in order to achieve the desired development of society healthy (WHO,1948).

The poverty afflicting many nations and slow economic development is due to sick populations that cannot perform their fundamental role of building the nations (Ikejiaku, 2009). The African continent depicts this characteristic where morbidity and mortality are high. The continent houses more than 70% of the world's poorest majority of which live in sub-Saharan Africa. Most of the fatalities are caused by communicable diseases which are preventable and treatable depending on the availability of resources.

Although most diseases afflicting Africa are infectious, the increasing urbanizations a change in lifestyle habits have enhanced the incidence of non-infectious diseases especially cardiovascular and malignancies ((EIU, 2012). The content has witnessed the growth of middle-class people who are willing to pay for quality services. The sedentary lifestyle and consumption of high caloric food have contributed significantly to the disease burden to Africa (Bishwajit, 2014). Lack of appropriate deterrent measures will pose enormous challenges including the inadequate provision of healthcare and economic development in Africa (Sliwa et al., 2016).

Health seeking behavior is dependent on political, socioeconomic, physical and cultural factors(Shaikh & Hatcher, 2005). The utility of the entire healthcare system will depend on social structures, cultural beliefs, literacy level, gender, disease pattern, and accessibility of the facilities. It is important therefore to understand the drivers of healthcare which influences the choice among the beneficiaries so that appropriate policies can be developed to improve it. The promotion of healthcare may be required where all the stakeholders should be involved.

1.2 Statement of the problem

The disease burden in Nairobi City County is high despite that economically it is one of the regions perceived to be the most endowed in Kenya. The majority of the residents live in slums that lack social amenities and poorly planned. People living in those places are poor and mainly unemployed (Kyobutungi et al., 2008). The most common diseases in Nairobi include pneumonia, diarrhea, tuberculosis, nutritional deficiencies among others but non-

communicable diseases such as cancer, endocrine, and musculoskeletal disorders as well as injuries are common. There are many challenges facing the healthcare sector in Nairobi especially lack of adequate human resources, shortage of medicines and other consumables rampant corruption and misunderstanding with the Ministry of Health (Kimani, 2017). These challenges ultimately cause retardation and a negative effect on the gains made in improving the health indicators. Kariobangi is densely populated and there are several healthcare providers who offer service to the people. The choice made by the residents is dependent on several factors that have not been identified since no research has been conducted in this area.

The are several health facilities in Kariobangi which are both publicly and privately owned and inhabitants are to a large extent educated. People tend to seek health services from government and private institutions. The effect of diseases is devastating as indicated by the high morbidity and mortality in the county arising from both communicable and non-communicable diseases. This is because some patients delay to visit appropriate health providers and therefore either succumb to the disease at home or in the hospital due to complications. Self-medication is quite common and therefore misdiagnosis and inappropriate treatment is prevalent.

The county has a huge number of untrained persons who give health care services to willing clients despite some of them knowing the professional status of the provider. The poor health care services offered continue to proliferate despite the government through the relevant bodies such as Medical Practitioners and Dentist Board and Pharmacy and Poisons

Board campaign to weed out unauthorized practitioners. Some people seek services from providers who are expensive despite that the illnesses can be managed in cheaper health facilities. This has led to patients being detained in hospitals due to the inability to pay causing psychological trauma and heavy financial burden to the next of kin. It is important therefore to investigate why people seek services from different healthcare providers so that solutions may be suggested on how to tackle this important issue that affects all residents directly or indirectly.

1.3 Research questions

1. What is the pattern for demand of healthcare among Kariobangi residents?
2. What are the determinants of demand for healthcare Kariobangi residents?
3. What are the policy recommendations regarding the choice of health care providers at Kariobangi?

1.3 Objectives of the study

1.3.1 General objective

To investigate the determinants of choice for healthcare providers among the informal business community of Kariobangi.

1.3.2 Specific objectives

1. To establish the pattern of choice of health facilities by the residents of Kariobangi.
2. To evaluate the determinants of the choice of health facilities among the residents of Kariobangi.
3. To suggest policy recommendations based on the study findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter summarizes the theoretical reviews and empirical findings of various researchers in the field under study. The summaries are derived from different parts of the world.

2.2 Theoretical review

Healthcare system is very dynamic due to due to advances in technology and change of disease patterns. The ease of access to information and increasingly educated population have empowered patients to make choices with optimal utility. The quality of care is important and people tend to pursue providers that offer services that are good depending of on the accessibility from the patients perspectives. The quality healthcare services may be measured and identified using different parameters such as adverse drug events, overuse and under use, medication errors, and iatrogenic diseases (Bertch, 2012).

Healthcare needs may be informed by the cultural beliefs of a community, ability to pay, education level,gender among others (Tesfaye, 2003). The institutional factors such as quality of care, availability of medicines, price, human resource, and innovation plays an important role in attracting clients (Kasirye et al., 2004). Some of the theories that have been propagated regarding the demand for healthcare are described in the following sections;

2.2.1 Grossman model

The factors that affect the demand for healthcare can be explained using the Grossman model (Grossman, 1972). Health is regarded as stock and can appreciate or depreciate depending on factors such as education and age. Among the reasons, individuals demand health is because are that health is the consumption commodity since it directs the individual choices or utility. Health is also an investment commodity. It determines how time should be spent in a market place. Healthy people work for long compared to those who are sick and therefore the state of health affects the monetary contribution of individuals to the economy. This may be considered as a return on investment and the stock of health determines the length of life and years of productivity

2.2.2 The health belief model (HBM)

This model seeks to explain the behavior of people when seeking health (Becker, 1974). The individual perception of the severity of disease and the consequences as well as the benefit which leads to certain course of action are crucial. The perceived barriers may hinder or prevent from seeking care leading to low profitability. All these factors additively influence the demand for healthcare. . Thus, high susceptibility, high severity, high benefits and low barriers are assumed to lead to a high probability of adopting the recommended action. Another factor that is frequently mentioned in connection with the HBM is cues to action (events that trigger behavior), but little empirical work has been conducted on this construct.

2.3 Empirical Literature review

Price plays an important when seeking health services. The outpatients have a higher elasticity of demand for the poor compared to the rich in rural china (Qian et al., 2009). Provider reputation or quality supersedes the effect distance and people travel far seeking for the utility of services. People who are insured tend to seek professional services and age influences the choice. In addition, married people tend to seek services from county hospitals instead of self-treatment compared to the unmarried ones.

Asteraye (2002) using logit models identifies individual and /or household-specific variables that affect demand for healthcare in Ethiopia. The factors that were found to have significant effect included type and severity of illness, literacy level, price, waiting time, and sex of the respondents.

Males were more likely to seek health services and the severity of illness affects how fast a person visits a clinician. People with high monthly income seek professional help. Long-distance from the heath facility and waiting time discourages people from visiting a health facility. The more educated respondents prefer public to private health facilities. Younger people prefer private health facilities compared to the old ones. The longer the time patients spend at private health facilities before they get treatment, the lower would be the probability of choosing them. Perceived quality of care and behavior of the staff are significantly associated with demand. According to Ali et al (2013) in Bangladesh, among the determinants for healthcare demand detected using binary logistic regression

model are price, education and waiting time. The higher the price the lower the demand for services which was positively correlated.

According to Ahikari et al.,(2014),the diseases that were prevalent in decreasing order in Dharan, Nepal, were; hypertension, skeletal, visual and digestive system problems, mouth diseases, respiratory diseases, diabetes mellitus, skin diseases, mental illness, gynecological problems, male genital problems, renal problem, heart disease, hearing problems, tuberculosis, liver disease and fractures. The treatment of choice was the faith healers regardless of ethnicity, age, and gender. If these healers fail, the people visited a public hospital, private practitioner, self-treatment and self-drug-use. The utilization of formal health facilities was reserved for serious chronic conditions. Treatment was considered a waste of money mainly due to poverty and poor attitude by health workers.

A research carried out in a slum area of Karachi shows that education plays a significant role in health-seeking behavior (Siddiqui et al, 2011). The preferred healthcare providers in order of decreasing popularity are general practitioners, allopathic healers, quacks, consult homeopaths, hakims, and faith healers. Self- medication is very common directed to treat allergy, fever, dysuria, abdominal pain, and running nose. The majority of the respondents obtained drugs from the clinics and about a fifth consult other healers when their health does not improve.

A study carried out in Southwestern Nigeria among students seeking healthcare shows that they entrusted their peers in health-related academic to provide solutions rather than

seek help from a designated health facility (Afolabi et al., 2013). Some students preferred community pharmacies decided on their own on what to do of refused to seek professional help due to religious reasons. The reasons for not seeking medical help were drug shortages, long waiting times, negative attitude and insufficient health information.

The choice of health provider depends on several factors (Amaghionyeodiwe, 2008. Distance and economic well-being are critical although money plays a minimal role. Those who are older prefer private and public health facilities and the poor prefer self-care options. Private clinics are preferred destinations for low-income households in China (Qian et al., 2008). Insured patients are more inclined to use public health facilities. Children visited the specialists more than adults.

The factors that influence the choice of the type of healthcare services Kenya includes distance, age, sex, level of education, cost, age, income, insurance and household size (Audi,2004). Housing condition, as a measure of socio-economic status, has a positive correlation with choice of public, mission or private health facility in comparison to lay-care. This supports the view that the richer segment of the respondents prefers professional health care to lay-care. If an individual has an insurance cover then it increases the probability of using government, mission or private facility as opposed to lay-care. Age is not a very important factor when selecting a provider of healthcare but decrease the probability of choosing government, mission and private health facilities. The individuals living with older household heads have a higher probability of using lay-care as opposed to professional care. Females and males differ in preference for

healthcare providers. In particular, being a female makes one more likely to visit government or mission health facilities. Educated individuals use more professional care (public, mission or private health providers) than the uneducated. Large households preferred lay care to the public, mission or private health facilities compared to lay-care. The cost was found to significantly affect the choice of provider negatively. This means that individuals will shun expensive healthcare providers. The longer the distance the less likely that the services of a provider would be sought. Similarly, total treatment time dissuades people from seeking healthcare. This indicates that the longer the total treatment time (waiting and treatment time) the lower the demand for services from the health provider

A study carried out by Mureithi (2013) in a Kenyan slum depicts that quality of care, health information, income, sex, cost, influence the choice of a health provider. Distance is negatively correlated with the choice of a health provider. The waiting time is positively correlated with demand and the information that a patient has about a health provider significantly impacts the choice of the facility. Males are less likely to seek professional health care compared to their female counterparts. Large households prefer private and public than self-treatment and those who are educated prefer professional help than self. Private clinics are more preferred compared to self-treatment.

2.4 Overview of the literature

Cost of healthcare is negatively correlated with the preference of a service provider as observed in several studies (Qian et al., 2009; Asteraye, 2002; Ali et al., 2013;

Amaghionyeodiwe, 2008; Audi, 2004; Mureithi, 2013). The seekers of healthcare services prefer providers who charge fairly. Males are more likely to seek treatment compared to females (Asteraye, 2002) but females have also been observed to seek healthcare services more than males in other studies (Audi, 2004; Mureithi, 2013). Older people seek professional healthcare services less and opt for self-treatment more than younger people (Qian et al., 2009; Asteraye, 2002; Audi, 2004). They also tend to patronize public healthcare facilities more (Amaghionyeodiwe, 2008). People who are more educated seek healthcare services from professionals rather than self-treatment (Audi, 2004). They also prefer private to public health facilities (Asteraye, 2002; Ali et al., 2013; Siddiqui et al., 2011). There is an association between waiting time for treatment and demand for services. There is a positive correlation between the two (Mureithi, 2013) but the converse is observed in other research findings (Audi, 2004; Asteraye, 2002). Distance has a negative correlation with the preference of a healthcare provider (Asteraye, 2002; Audi, 2004; Amaghionyeodiwe, 2008; Mureithi, 2013). People tend to seek health services where quality is appropriate (Mureithi, 2013; Ali et al., 2013; Qian et al., 2009). Insured people tend to seek professional services than self-treatment (Qian et al., 2008; Audi, 2004). They also prefer private to public healthcare providers. Large families have a low propensity in seeking treatment (Audi, 2004; Asteraye, 2002) and those who are financially well up prefer professional help.

Despite that several studies have been done regarding factors that affect the choice of healthcare providers, none has addressed the role of diseases. This study, among others, will explore the relationship between the category of disease and health-seeking behavior.

It will assess the prevalence of the diseases and correlate with the preferred healthcare provider in order to deduce whether there is any relationship.

CHAPTER THREE: METHODS

3.1 Introduction

This chapter summarizes the components of the methodology that are essential to carry out the research process. They include theoretical framework, econometric model and estimation, definition measurements and the sign of the variables, study area, research design, target population, sample size, sampling technique, data collection, ethical considerations, data analysis and pretesting.

3.2 Theoretical Framework

Assuming that an individual T in a given period has potential access to 'j' health care provider alternatives. For each alternative 'j' the individual's utility is given by the conditional utility function:

Ujj = U (Hij, Cjj)..... (1)

Subject to Yj = Cjj + Pjj..... (2)

The function indicates that an individual derives utility from being healthy and the consumption of goods other than health care.

Hjj = is the expected health status of individual 'i' after receiving care from provider 'j'

Cjj = is the consumption of other goods apart from health care.

P,ij = is the price of choosing provider 'j'

Yj = is individual income.

The total cost of visiting a given provider includes the monetary price plus the nonmonetary price. The non-monetary price represents the opportunity cost of time devoted to traveling and waiting associated with a visit to a given facility 'j'

The budget constraint is therefore redefined as:

$Y = Cii + Pij + (TTjj + WT\ ij)*wi$..... (3)

Where:

wi = is the opportunity cost of time.

TTij is the traveling time to facility 'j'

WT ij = the waiting time at facility 'j'

The expected health status (Hjj) after being provided with treatment from provider 'j' is expressed as:

$H,j = Eij + Hi0$.....(4)

Where:

Hj0 = is the initial health status before treatment

Ejj = is the expected competence of provider 'j'

The fact that many illnesses heal spontaneously lends support to the view that the individual is the ultimate producer of his/her health. This implies that the individual, with or without the physician's help, can influence the state of health but not to effectively determine it. The expected effectiveness (quality measure) (Ejj) may, therefore, be represented as a household production function which depends on patient and provider characteristics:

$E_{ij} = E (B_i, Aj)$..... (5)

Where:

B_1 represents characteristic of household or individual

Aj is a provider characteristics vector

Substituting equations (2) to (5) in equation (1) generates the conditional utility function below:

Uij = U (H10 + E (Bj, Aj), Y, - Py - Wi (TTjj + WT.j))..... (6)

Equation (6) shows that utility depends on the quality of health care received and on the consumption of all other goods (net income).

3.3 Econometric Model and Estimation

The multinomial logit model (MNL) is one of the discrete models used in estimation. It is simple, easy to estimate and interpret, and provides cross-elasticities. The econometric model employed in this study to investigate the socioeconomic effects and provider factors that affect the choice of healthcare providers at Kariobangi is expressed as follows;

$$HealthPC=\alpha+ \beta_1Gender +\beta_2Age+ \beta_3EducationL +\beta_4Religion+\beta_5MaritalST + \beta_6HHsize+ \beta_7Occupation+ \beta_8CategDis+ \beta_9Price+ \beta_{10}WaitingT+ \beta_{11}Pattitude+ \beta_{12}DrugsA+ \beta_{13}QualityT + \beta_{14}Insurance+ \beta_{15}Distance + \varepsilon$$

Where:

α= Constant

Age = Age in years

Gender= Sex of the participant

EducationL= Level of education

InsureC= Insurance coverage

Religion= Type of religion

Occupation= Type of employment

MaritalST = Marital status

DrugsA= Availability of drugs

Pattitude= Health provider attitude

CategDis= Category of disease

Price= Cost of healthcare from a patient perspective

HHsize= Household size

Distance= Distance to the nearest health facility in Kilometers

WaitingT= Time between arrival and completion of the treatment process.

HealthPC= Choice of healthcare provider

ε = Error term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 \ldots\ldots\ldots\ldots \beta_{15}$, are the beta coefficients

3.4 Definition measurements and sign of the variable

The variables, their definitions, measurements and sign from previous studies shown in **table 3.1**

Table 3.1 Summary of variables

Dependent variabl	**Definition**	**Measurement**	**Expected outcome**
Type of Health care Provider (HelthPC)	Place where health care services were sought.	1 for a particular health facility and 0 for otherwise	----------
Explanatory variables			
Age	Age of the individual complete years	Number of years	**-ve** ((Qian et al., 200 Asteraye, 2002; Auc 2004)
Gender	Sex of the participant	1 for Male and 0 f female	**+ve** (Asteraye, 2002) **-ve**(Audi, 2004; Mureithi, 2013)
Education (EducationL)	Level of education	0=none, 1=primar 2=secondary 3=tertiary	+ve (Audi, 2004)
Insurance coverage (InsureC)	Status of an individual health insurance	0=none, 1= Public, 2=private, 3= Both public and private	**+ve** (Qian et al., 2008; Audi, 2004)
Religion	Subscription to a particular religion	0=No religion, 1=Christian, 2=Muslin 3=Others	----------
Occupation	Meaningful economic activity with compensation.	1 for regular employment, 0 otherwise	----------
Marital status	Presence of a spouse	1= married, 2= Nev	----------

(MaritalST)		married 3= Widow/Widowe 4=divorced	
Availability of drug (DrugsA)	Availability of drugs in health facility	1= Available, 0= N available	**+ve** (Mureithi, 2013)
Attitude of the healthcare provider (Pattitude)	Behavior of healthcare provider towards the respondent during the visit	1= Positive, 0=Negativ	**+ve** (Mureithi, 2013
Type of disease (CategDis)	Disease that made the respondent visit tl facility	1= Communicab diseases, 0= Non-communicab diseases	----------
Price	Cost for servic rendered	Kenya shillings	**-ve** (Qian et al., 2009; Audi, 2004; Mureithi, 201
Household size (HHSize)	Number of household members	0= 2 and below, 1= and 4 2= above 4	-ve (Audi, 2004; Asteraye 2002)
Distance	Distance in kilometers from the nearest health	Kilometers	**-ve** (Asteraye, 2002; Audi, 2004; Amaghionyeodiwe, 2008; Mureithi, 2013)
Waiting time (WaitingT)	The time between the arrival of and encounter with the clinician	Hours	**+ve** (Mureithi, 2013) **-ve** ((Audi, 2004; Asteraye, 2002)

Source: Author

3.5 Data source

3.5.1 Research design

A descriptive cross-sectional design to determine the factors that influenced the choice of the health care provider in Kariobangi was used. This design was appropriate because the data collected related was current at a point in time. The design is easy to use and can provide data that can be a basis for an intervention study.

3.5.2 Study area

The Kariobangi area of Nairobi was the study site. Of the many urban informal settlements, Kariobangi was selected for three reasons. The first is that no study has been conducted on determinants of choice of healthcare providers. Secondly, the area has several types of businesses which are potential risks to health for the residents. Thirdly the area is highly populated with a varied socioeconomic status of the dwellers. It is a home of small industries some of which emit unhealthy fumes into the air.

The area has only two public primary schools, 129 informal pre-primary and primary schools, which charge fees, and one secondary school. The area covers 1.6 sq. km and has a population of 61,077, comprising of 29,796 female and 31,281 males. It also has 19,282 households (Republic of Kenya, 2010a,). Kariobangi has an active micro and small enterprise base, which the research considers as a seedbed for evaluation of healthcare awareness and provision. The area also has several health facilities that are owned by Nairobi City County, faith-based organizations, private clinics, and community pharmacy practitioners. These facilities provide healthcare services to the residents.

Kariobangi North has located 18 km from Nairobi City center on the North-eastern part of Nairobi. It borders the light industries to the South, Huruma estate to the South-west, Korogocho estate to the East, Mathare estate to the West, and Baba Dogo estate to the North. It is served by Outering Road which connects the Jomo Kenyatta International Airport, to the Thika superhighway through the General Service Unit (GSU) intersections. It is within the Embakasi North constituency, Kasarani District, in Nairobi City County.

3.5.3 Target population

The people working in the micro and small enterprises within Kariobangi were targeted. The micro and small entrepreneurs will be selected across all categories. The entrepreneurs who were owners or managers of the micro and small enterprises were selected and interviewed. There were approximately 1200 small enterprise groups in the area

3.5.4 Sample size

The sample size is determined using Yamane's formula as follows;

$$n = \frac{N}{1 + N\,(e)^2}$$

Where

N= Population size. In this study, the population will be the number of business enterprises =1200

n = sample size

e = degree of precision required. In this study, the level of the desired level of precision is 5%

$$\text{Therefore the sample size} = \frac{1200}{1 + 1200\,(0.05)^2} = 300$$

3.5.5 Sampling technique

Respondents were selected using systematic random sampling. The participants to be interviewed were determined from the sampling frame and sample size as follows;

$$I^{th}\ \text{respondent} = \frac{\text{Sampling frame}}{\text{Sample size}} = \frac{1200}{300} = 4$$

Every 4^{th} person was interviewed. The researcher went to the study area and counted the business within sight at random. The occupant of the fourth enterprise was approached and explained the purpose of the study. After giving consent, an interview took place within the premises and the process was repeated until the desired sample size was achieved. Randomization of the respondents reduced selection bias and therefore enhance the reliability and validity of the study findings.

3.5.6 Data collection

A structured questionnaire was used to collect data. This questionnaire had both open-ended and closed-ended questions and was completed during the interview by the researcher. The questions were unambiguous to reduce bais and improve reliability and were limited to a period of one year.

3.5.7 Ethical considerations

The researchers obtained informed consent from each participant prior to the interview. Confidentiality of the information was observed and the participant may benefit from the information given regarding appropriate health-seeking behavior.

3.5.8 Pre-testing

Prior to the main study, the researcher tested the data collection instrument on validity and reliability. Ten copies of the questionnaire were piloted using a convenience sampling method. The research assistant was taken through the questionnaire. Any ambiguity or misunderstanding was clarified before starting data collection. The responses were compared and the extent of understanding evaluated. Adjustments to the questions were done to ensure that the interviewee understood the questions well.

3.5.9 Diagnostic tests

3.5.9.1 Multicollinearity test

The purpose of the test was to explore the collinearity of the study variables. The study examined the correlation between explanatory variables and observed the direction of the factors. To confirm the existence of Multicollinearity, the study also used Variance of Inflation Factors (VIF) and if present, the researcher dropped one of the collinear variables. The recommended threshold is a VIF of 10 with a tolerance value of not less than 0.1.

3.5.9.2 Normality test

The variables were tested whether the residuals/error term followed a normal distribution which is a requirement for multinomial logit. The study considered variables normally distributed when their respective p values were greater than 5%.

3.5.9.3 Heteroscedasticity test

Heteroscedasticity implies variation of the residuals across all the observations under study. The study used the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity for this purpose.

CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 Introduction

This chapter summarizes the descriptive and inferential characteristics of the study variables in tables. The predictors of healthcare providers' choice were determined using a Multinomial logit. The discussion of the findings is also included**.**

4.2 Descriptive characteristics

Descriptive characteristics include the mean, standard deviation, and the range of dependent and explanatory variables and the results are summarized in **Table 4.1**. Three hundred and one participants were recruited into the study.

Table 4.1 Descriptive statistics of variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Health provider	301	2.168	1.165	1	5
Gender	301	.578	.495	0	1
Age	301	32.757	9.908	18	70
EducationL	301	2.934	.834	1	5
Religion	301	1.037	.33	0	3
MaritalST	301	.791	.697	0	4
HHsize	301	3.282	1.682	1	9
Occupation	301	1.512	.661	0	2
CategDis	301	.601	.49	0	1
Price	301	688.804	329.721	100	1600
WaitingT	301	1.928	1.285	.1	6
Pattitude	301	.15	.357	0	1
Distance	301	2.846	2.416	.1	12
DrugsA	301	.196	.398	0	1
QualityT	301	.425	.495	0	1
InsureC	301	.286	.453	0	1
Pattitude	301	2.1	1.165	1	5

The participants had a mean age of 32.7 years and most (57.8%) of them were males. Kariobangi estate is mainly residential and commercial estate where most residents engage in small and medium enterprises. Those who were working comprised mainly men which are a common phenomenon since women are entrusted in maintaining the homes and taking care of the children. The majority of the participants were youthful since this age group is energetic and forms the largest proportion of the working population.

Most (57.1%) of the respondents were a secondary level of education graduates and only 4.7% were university graduates. This observation reverberates with informal settlements where the majority engage in businesses that do not require a lot of knowledge and skills. The majority (63.2%) of the participants were married. The traders were adults and had families who are accepted as a social obligation. The residents were largely engaged in self-employment (60.7%) and only a handful (28.6%) had an insurance cover. Public health insurance was the most popular at 24.9%. Low insurance coverage depicts a scenario where those eligible were either unaware or just ignores to get engaged. Since the majority were youth, they probably do not contemplate health risks.

Communicable diseases were the most prevalent (60.1%) and public health facilities preferred (39.2%) as a service provider. These institutions were owned and managed by the national and county governments and serve the larger population. Private health facilities were the second most popular at 31.6% and comprised of private hospitals, nursing homes, private clinics, and company clinics. They were managed by private

entities with the aim of providing services, making a profit and creating wealth for the owners. Community pharmacies were the third most popular destination for the participants at 13%. These are enterprises that were the main outlets for the drugs to the public and are easily accessible. All the health facilities owned or managed by faith-based organizations were categorized as mission health facilities. They included mission hospitals, health centers, dispensaries, and clinics. The least popular health provider was the lay care which comprised of kiosks, traditional healers and village health workers. This caliber of providers does not have adequate knowledge or skill in disease management. They often sell over the counter products including herbs.

Participants were more likely to seek treatment where the quality of services was good (45.5%), nearer (35.9%), cheap (29.4%), and waiting time was short (20.3 %.) and drugs were available (19.6%). Other provider attributes that influenced the choice inlude positive attitude (15%), active listening (13.3%), ability to explain diagnosis, and tidiness of the health facility (10%). Confidentiality was the least important factor considered by the participants.

4.3 Diagnostic tests

4.3.1 Normality test

The researcher tested for normal distribution of the residuals/error term using skewness/Kurtosis tests for Normality. This test explores the skewness and kurtosis of the distribution and then determines the overall test statistic. Skewness is a measure of symmetry while Kurtosis is a measure of whether the data is heavily tailed or light-tailed relative to a normal distribution.

Table 4.2 Normality test

Variable	Obs	Pr(Skewness)	Pr(Kurtosi)	Adj2(2)	Prob>chi
Resid	301	0.2418	0.5856	1.68	0.4321

The results show that the variables were normally distributed since the p-value was more than a 5% level leading to non- rejection of the null hypothesis. The data was, therefore, suitable for use in a Multinomial logit (Awiti, 2013).

4.3.2 Multicollinearity test

A correlation matrix was undertaken to find out whether there are explanatory variables

Table 4.2 Correlation matrix

	Gender	Age	EducationL	Religion	MaritalST	HHsize	Occupation
Gender	1.0000						
Age	0.0301	1.0000					
EducationL	-0.0116	-0.1185	1.0000				
Religion	0.0335	0.0660	0.0089	1.0000			
MaritalST	-0.0636	0.3473	-0.3049	0.0334	1.0000		
HHsize	-0.0807	0.2571	0.0277	0.0535	0.1756	1.0000	
Occupation	0.0622	0.2768	0.0149	0.1170	0.1322	0.1035	1.0000
CategDis	0.0463	-0.1249	-0.0324	-0.0127	-0.1474	-0.0449	-0.0213
Price	-0.0213	-0.0105	0.0287	-0.0269	0.0353	0.0564	-0.0321
WaitingT	0.0466	-0.0174	-0.0217	0.0637	0.0103	-0.0833	-0.0220
Pattitude	0.0563	-0.0293	0.1230	-0.0749	0.1127	0.0626	0.0011
Distance	-0.0923	0.0916	0.0850	-0.0540	0.0320	0.0468	0.0172
DrugsA	-0.1204	0.0510	0.0193	-0.0548	0.0884	0.0515	0.0671
QualityT	-0.1768	0.0116	0.1332	-0.1159	0.0366	-0.0206	-0.1437
InsureC	-0.0553	0.0951	0.1565	0.0192	0.0740	0.0601	0.0657
	CategDis	**Price**	**WaitingT**	**Pattitude**	**Distance**	**DrugsA**	**QualityT**
CategDis	1.0000						
Price	0.0372	1.0000					
WaitingT	0.0100	0.0203	1.0000				
Pattitude	-0.0011	-0.0121	0.0278	1.0000			
Distance	0.0038	0.1644	-0.0114	0.0456	1.0000		
DrugsA	0.0602	-0.0315	-0.0057	0.1685	0.0672	1.0000	
QualityT	-0.0408	0.0399	0.0961	0.0917	0.2452	0.1170	1.0000
InsureC	-0.0408	-0.0171	-0.0248	-0.0177	0.0476	0.0212	0.0808
	InsureC						
InsureC	1.0000						

that were correlated with each other. This can lead to one variable predicting the other leading to redundant information thereby skewing the results in a regression model. The correlation coefficients are summarized in **Table 4.3**. Multicollinearity exists when the correlation coefficient is close to +1 or -1. The threshold was taken as 0.8. All the coefficients were considerably below the threshold and therefore no multicollinearity between the variables existed.

To confirm the 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**. From the VIF test, it is confirmed that all the values including the mean were slightly above one and therefore there was no correlation between the predictor variables (Nachtscheim, et. al, 2004).

Table 4.3 Variance inflation factor

Variable	**VIF**	**1/VIF**
MaritalST	1.354	.739
Age	1.296	.771
EducationL	1.232	.811
QualityT	1.189	.841
Occupation	1.135	.881
HHsize	1.125	.889
Distance	1.117	.896
PAttitude	1.102	.908
Gender	1.081	.925
DrugsA	1.079	.927
InsureC	1.059	.944
CategDis	1.052	.951
Religion	1.048	.955
Price	1.042	.959
WaitingT	1.032	.969
Mean VIF	1.129	.

4.3.3 Heteroscedasticity Test

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity was used where the null hypothesis for constant variance was tested variables of provider fitted. The chi 2(1) = 27.63 and p> chi2= 0.0000. This showed that heteroscedasticity was absent.

4.4 Regression results

4.4.1. Multinomial logit

Overall, the results indicated that several factors determined the patients' choices for alternative types of health care **(Table 4.4)**. The provider options were determined by the facility attributes namely; the cost of treatment, distance to facility, total treatment time, quality of healthcare, availability of drugs and attitude of the health providers. The individual attributes included age, gender, education, religion, marital status, household size, occupation, type of disease category (whether communicable or non-communicable), and whether they had a health insurance policy or not. The variables that are marked with asterisks were found to be statistically significant.

The coefficient of gender was positive for the private and mission health facilities as well as community pharmacy but negative for lay care. This implies that women were more likely to seek services from public health facilities compared to men. Most women have limited control of household resources compared to men and therefore they would prefer the public health facilities which are cheap. This observation is supported by the fact that

more women seek health services from lay care than men which largely offer services that are cheaper.

Table 4.4 Multinomial Logit

Provider	**Coef.**	**St.Err.**	**t-value**	**p-value**	**[95% Conf**	**Interval]**	**Sig**
Public health facility (Base outcome)							
Private							
Gender	0.504	0.321	1.57	0.117	-0.125	1.133	
Age	-0.011	0.017	-0.67	0.506	-0.045	0.022	
EducationL	-0.107	0.198	-0.54	0.588	-0.495	0.281	
Religion	-0.603	0.515	-1.17	0.242	-1.613	0.407	
MaritalST	0.326	0.279	1.17	0.243	-0.221	0.872	
HHsize	0.065	0.097	0.68	0.499	-0.124	0.255	
Occupation	-0.123	0.244	-0.51	0.613	-0.601	0.355	
CategDis	-0.499	0.313	-1.60	0.111	-1.111	0.114	
Price	0.000	0.000	-0.93	0.355	-0.001	0.000	
Time	-0.506	0.143	-3.55	**0.000**	-0.786	-0.227	***
Attitude	1.060	0.442	2.40	**0.016**	0.194	1.925	**
Distance	-0.064	0.066	-0.97	0.331	-0.193	0.065	
DrugsA	0.128	0.412	0.31	0.755	-0.679	0.936	
QualityT	0.780	0.327	2.39	**0.017**	0.140	1.420	**
InsureC	0.496	0.331	1.50	0.134	-0.153	1.144	
Mission health facilities							
Gender	0.107	0.434	0.25	0.805	-0.744	0.958	
Age	0.007	0.022	0.33	0.740	-0.036	0.050	
EducationL	-0.236	0.291	-0.81	0.417	-0.805	0.334	
Religion	-0.022	0.658	-0.03	0.973	-1.312	1.267	
MaritalST	0.256	0.352	0.73	0.468	-0.434	0.946	
HHsize	0.005	0.135	0.04	0.968	-0.260	0.271	
Occupation	-0.271	0.323	-0.84	0.401	-0.905	0.362	
CateDis	-0.899	0.431	-2.09	**0.037**	-1.743	-0.055	**
Price	-0.001	0.001	-1.48	0.138	-0.002	0.000	
WitingT	-0.953	0.221	-4.32	**0.000**	-1.385	-0.520	***

PAttitude	0.642	0.633	1.01	0.310	-0.599	1.884	
Distance	0.000	0.087	-0.01	0.996	-0.171	0.170	
DrugsA	0.523	0.543	0.96	0.336	-0.542	1.588	
QualityT	1.511	0.470	3.22	**0.001**	0.590	2.431	***
InsureC	-0.108	0.476	-0.23	0.820	-1.042	0.826	
Community_pharmacy							
Gender	0.778	0.716	1.09	0.277	-0.625	2.182	
Age	-0.060	0.043	-1.40	0.163	-0.144	0.024	
EducationL	-2.077	0.654	-3.17	**0.002**	-3.359	-0.794	***
Religion	0.280	1.055	0.27	0.791	-1.788	2.348	
MaritalST	1.127	0.643	1.75	**0.080**	-0.133	2.386	*
HHsize	-0.056	0.216	-0.26	0.796	-0.480	0.368	
Occupation	-1.073	0.581	-1.85	**0.065**	-2.212	0.066	*
CtegDis	0.130	0.723	0.18	0.858	-1.288	1.547	
Price	-0.001	0.001	-0.81	0.419	-0.003	0.001	
WaitingT	-6.228	1.108	-5.62	**0.000**	-8.399	-4.058	***
PAttitude	-0.562	1.167	-0.48	0.630	-2.849	1.726	
Distance	0.079	0.159	0.50	0.619	-0.232	0.390	
DrugsA	0.994	0.878	1.13	0.258	-0.727	2.715	
QualityT	-1.345	0.876	-1.53	0.125	-3.062	0.372	
InsureC	-1.340	0.937	-1.43	0.153	-3.178	0.497	
Lay care							
Gender	-1.512	1.110	-1.36	0.173	-3.688	0.665	
Age	-0.069	0.075	-0.92	0.357	-0.216	0.078	
EducationL	-3.018	0.787	-3.84	**0.000**	-4.560	-1.475	***
Religion	-2.550	12.006	-0.21	0.832	-26.081	20.982	
MaritalST	-2.234	1.389	-1.61	0.108	-4.957	0.488	
HHsize	-0.195	0.367	-0.53	0.595	-0.915	0.524	
Occupation	0.430	0.833	0.52	0.606	-1.204	2.063	
CategDis	0.646	1.116	0.58	0.563	-1.542	2.834	
Price	-0.007	0.003	-2.69	**0.007**	-0.013	-0.002	***
WaitingT	-5.272	1.180	-4.47	**0.000**	-7.585	-2.959	***
PAttitude	-16.691	2555.434	-0.01	0.995	-5025.249	4991.867	
Distance	0.344	0.256	1.35	0.178	-0.157	0.845	
DrugsA	-3.189	1.912	-1.67	**0.095**	-6.936	0.558	*
QualityT	-20.753	1364.943	-0.01	0.988	-2695.991	2654.486	
InsureC	1.535	1.157	1.33	0.184	-0.732	3.802	

Mean dependent var	2.100	SD dependent var	1.165
Pseudo r-squared	0.350	Number of obs	301.000
Chi-square	289.771	Prob > chi2	0.000
Akaike crit. (AIC)	665.954	Bayesian crit. (BIC)	903.209
****** p<0.01, ** p<0.05, * p<0.1***			

Age had a negative effect on choosing health services from all the other facilities except mission ones compared to the public health facility. Educated individuals used more public health facilities compared to all the others compared to the uneducated ones. Those participants who were religious tended to visit public health facilities compared to the private, mission and lay care more than those who were not. Participants who were married had a higher probability of seeking services from private and mission health facilities as well as from community pharmacies than public health facilities compared to those who were single. They, however, preferred the latter than lay care. Household size had a negative relationship with private and mission health facilities as well as community pharmacies but a positive one with lay care. Participants who were self-employed preferred not to seek treatment from private and mission health facilities as well as community pharmacy but from public health facilities and lay care. Those who sought treatment for non-communicable diseases preferred private and mission entities while public health facilities, community pharmacies and lay handled the communicable diseases.

The price of health services was found to be negatively associated with all the providers compared to public health facilities. It was evident that waiting time plays a very important role in attracting patients to a health facility. All the health facilities had a statistically significant negative association with time compared to public health facilities. Private and mission health facilities demonstrated a positive attitude to patients compared to public health facilities. However, the community pharmacy and lay care portrayed a comparative negative attitude. There was a positive association between

distance and community pharmacy and lay care. These service providers were many and operate for long hours. The quality of treatment was better and the availability of medicines was observed to be better for private and mission health facilities compared to public entities. The trend was, however, negative for community pharmacy and lay care for the same.

4.4.2 Marginal effects of the choice of public health facilities

Marginal effects portray how a dependent variable changes per unit of change of independent variables at ceteris paribus. In this study, the dependent variable was the public health facilities. The results are summarized in **Table 4.6.**

Table 4.5 Marginal effects of choosing a public health facility

Variable	**Dy/dx**	**Std. error**	**z**	**P>**	**95% C.I.**	
Gender	-.1004268	.07398	-1.36	0.175	-.245435	.044581
Age	.0017321	.00395	0.44	0.661	-.006008	.009472
EducationL	.0341068	.04646	0.73	0.463	-.056951	.125165
Religion	.1146908	.11539	0.99	0.320	-.111461	.340842
Marital	-.0762812	.06534	-1.17	0.243	-.204337	.051775
HHsize	-.0126012	.02254	-0.56	0.576	-.056783	.031581
Occupation	.0391625	.05668	0.69	0.490	-.071928	.150253
CategDis*	.1449352	.07005	2.07	**0.039**	.007645	.282226
Cost	.0001394	.00011	1.29	0.197	-.000073	.000351
WaitingT*	.1513654	.03288	4.60	**0.000**	.086926	.215805
Pattitude*	-.2203091	.08561	-2.57	**0.010**	-.388108	-.05251
Distance	.0120609	.01508	0.80	0.424	-.017488	.04161
DrugsA	-.0564905	.09318	-0.61	0.544	-.239113	.126132
QualityT*	-.2303171	.07066	-3.26	**0.000**	-.368809	-.091825
InsureC	-.0886561	.07532	-1.18	0.239	-.236289	.058976
Variable dy/dx Std. Err. z P>|z| [95% C.I.]						
Marginal effects after mlogit y = Pr(Provider==public_health_facility) (predict) = .44188937						
**** p<0.05***						

Poor quality of treatment decreased the probability of seeking services from public health institutions by 23%. The negative attitude of healthcare workers decreased the probability of visiting public health facilities by 22% at 0.05 level of significance. Communicable diseases increased the probability of visiting public health facilities by 14.5% An additional hour of waiting time enhanced the chances of visiting a public health facility by 15.1%.

4.5 Discussion

Age was found to have a varied relationship with the choice of healthcare providers. It was observed that older people preferred public health facilities. This is probably because they have been tested over time and therefore reliable. Most of the public health facilities render affordable services and therefore there the destination of choice for the majority of residents. Older people visit these facilities more partly because of the chronic nature of their illnesses and economic hardships (Amaghionyeodiwe, 2008).

The level of education was positively correlated with public health facilities. This observation is evident because there was a statistically significant negative relationship between the level of education and lay care as well as community pharmacy compared to public health facilities. These two latter healthcare providers do not have adequate professional diagnostic processes and rely on what the customers inform them to form an opinion about diseases that may be erroneous. The educated members of society seek treatment elsewhere initially and visit the community pharmacy to purchase medicines. They are aware of the consequences associated with the wrong treatment. People who are

more educated seek healthcare services from professionals rather than self-treatment (Audi, 2004).

Those participants who were religious tended to visit public health facilities compared to the private, mission and lay care more than those who were not. Although the relationship was not statistically significant. This observation may be due to the availability and affordability of public health facilities at Kariobangi. In addition, religion tends to enhance the perception of reliance on more established healthcare facilities that have withstood the test of time. Participants who were married were more likely to seek health services from private and mission health facilities as well as from community pharmacies than public health facilities compared to those who were single. They, however, preferred the latter than lay care. Generally, married people are more cautious about the health of their families. They can afford to spend more on health and tends to shun any situation that can jeopardize their wellbeing. The association between choice of healthcare provider and marital status was not statistically significant. This finding contravenes findings from a Chinese study where married outpatients, on average, were more likely to visit county hospitals relative to self-treatment than those who are unmarried (Qian et al, 2009).

Household size had a negative relationship with private and mission health facilities as well as community pharmacies but a positive one with lay care. The disposable income tends to shrink with an increase in household size. Large families, therefore, tend to seek services from cheaper sources compared to relatively expensive ones. Public health

facilities are generally cheaper than private entities with the exception of lay care. Family size and income determine health-seeking behavior (Asteraye, 2002).

Participants who were self-employed preferred not to seek treatment from private and mission health facilities as well as community pharmacy but from public health facilities and lay care. The majority of those working at Kariobangi were running small enterprises that may not be generating a lot of profit. Therefore they preferred public health facilities and lay care which was relatively cheap and easily accessible. Significant barriers to seeking medical attention include the cost of care, protracted waiting time, inadequate health information, the unfriendly attitude of healthcare workers and drug shortage (Afolabi et al., 2013).

Those who sought treatment for non-communicable diseases preferred private and mission entities while public health facilities, community pharmacies and lay care handled the communicable diseases. Most communicable diseases are easy to diagnose and manage and lasts for a short period. Therefore they do not require sophisticated treatment in most cases. The participants were, therefore, able to access the required services from various sources in a timely manner devoid of lengthy processes. Non-communicable diseases are often life long and require close monitoring to avoid complications. Therefore those who were victims preferred services that were comprehensive and consistent which could be accessed in the private and mission health facilities.

The cost of health services was found to be negatively associated with all the providers compared to public health facilities. The association was statistically significant for lay care but not for the others. It is evident from this finding that most of the participants preferred public health facilities compared to the alternatives. The public health facilities are owned by the County Government of Nairobi and most of the services are not charged while others are cheap. Because of the economic status of the participants, they sought treatment in the most affordable places.

It was evident that waiting time plays a very important role in attracting patients to a health facility. All the health facilities had a statistically significant negative association with time compared to public health facilities. This implies that participants avoided visiting the latter due to the long waiting time. They were mainly self-employed and detested spending a substantial amount of time away from their businesses. The public health facilities usually handle many patients. The processes are also slow and therefore a person may end up spending a lot of time. There is an association between waiting time for treatment and demand for services. There is a positive correlation between the two (Mureithi, 2013) but the converse is observed in other research findings (Audi, 2004; Asteraye, 2002). Depending on the type of services being sought and their availability, the waiting time can vary provided the client to achieve satisfaction with the services rendered.

The attitude of the health care provider is important when rendering services. A positive attitude attracts clients. The negative attitude of healthcare workers decreased the

probability of visiting public health facilities by 22% at 0.05 level of significance. The manifestation of this behavior included poor communication, corruption, absenteeism, lack of confidentiality, and authoritarian or frightening approaches (Mannava *et al*, 2015). This was probably influenced by the high workload and inadequate compensation leading to frustrations. Private and mission health facilities demonstrated a positive attitude compared to public health facilities to the participants. However, the community pharmacy and lay care portrayed a comparative negative attitude probably because most of the workers are not well-trained health professionals.

There was a positive association between distance and community pharmacy and lay care. These service providers were many and operate for long hours. The participants could access them easily compared to public health facilities. The negative association depicted by private health facilities was because they were comparatively far. To cover a distance requires energy and time. People, therefore, prefer short distances that will demand fewer resources and save time for other activities. Distance has a negative correlation with the preference of a healthcare provider (Asteraye, 2002; Audi, 2004; Amaghionyeodiwe, 2008; Mureithi, 2013).

People prefer health facilities that provide adequate services including medicines. The findings from this study are a testimony of this perception where there was a positive relationship between the availability of medicines and the preference of all the service providers except lay care. Generally, public health facilities have been associated with a shortage of medicines while the converse holds for the private and mission health

facilities as well as community pharmacies. The lay care is only authorized to stock over the counter products which do cater for the wide range of diseases encountered in practice.

There was a positive association between the quality of treatment and choice of healthcare provider for private and mission health facilities compared to public entities. However, the respondents preferred the public health facilities to community pharmacy and lay care. Poor quality of treatment decreased the probability of seeking services from public health institutions by 23%. Quality is paramount and clients shun institutions that are deficient. The determinants of quality include the caliber of workforce and availability of resources such as medicines, laboratory services, diagnostic equipment, and tidiness of the surrounding among others. Quality health care is associated with satisfaction of clients, loyalty and increased productivity and profitability (Mosadeghrad, 2014). It is a significant determinant of the choice of healthcare providers (Muriithi, 2013).

Communicable diseases increased the probability of visiting public health facilities by 14.5% at a 5% level of significance. This observation may be due to the sudden onset of these diseases and ease of treatment. They do not need prolonged follow up and resolve with minimal residual disability. People, therefore, prefer public health facilities because they are easily accessible. A study carried out in China showed that the most frequently preferred health care providers were community health facilities (Wenya Yu et al., 2017).

An additional hour of waiting time enhanced the chances of visiting a public health facility by 15.1% at a 5% level of significance. These facilities are associated with a prolonged waiting time due to congestion and inadequate resources compared to the alternative sources of healthcare.

Waiting time has been observed to affect the choice of health care providers in various ways. Mureithi (2013) observed that patients persevered until they obtain services sought for regardless of the duration involved. The quality of service and patient satisfaction was paramount.

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CHAPTER FIVE: SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 Introduction

This chapter comprises the summary and conclusions of the study findings. The recommendations and policy implications are also summarized. Areas for further research have been suggested.

5.2 Summary

The mainstay of the healthcare system in Kariobangi public health facilities. The private facilities and faith-based organizations also contribute to the provision of health services in the country. Inadequate public resources coupled with informed citizenly have facilitated the establishment of alternative sources of healthcare which are formal and informal. Among the facility factors that influenced choice of healthcare provider were attitude of the providers to patients, availability of medicines, waiting time, distance, cost, tidiness, and waiting time. The participant characteristics included age, sex, marital status, household size, and insurance cover, category of disease and education level. Most of the participants were youthful and visited health facilities because they had communicable diseases. Only a small proportion had health insurance cover and the National Hospital Insurance fund was preferred. Most of the residents had attained secondary level of education and were married. Multinomial logit was used to find the predictors of choice of healthcare providers. The dependent variable was the choice of a healthcare provider. Using the public health facilities as the base category, the

determinants of choice of health providers were quality of treatment, waiting time, availability of medicines, attitude, marital status, and level of education

5.3 Conclusion

The choice of healthcare provider in Kariobangi was dependent on several factors. Public health facilities were the most preferred. However they were associated with long waiting time, negative attitude towards patients by health workers, and poor quality of services.

5.4 Policy recommendations

There is a need to improve the public health facilities in Kariobangi Estate. Since most residents are dependent on them for healthcare services, then they should be stocked with sufficient drugs and the workers nurture a positive attitude to the patients. In addition, they should find a means of reducing the waiting time. These measures will enhance their image and enable them to attract more customers. The Nairobi City County government should provide the necessary both human and material resources in order to improve the provision of healthcare services .resources. Kariobangi residents should be encouraged to acquire a health insurance policy. This can be achieved through sensitization by the concerned authorities. Lack of insurance cover exposes people that can have a deleterious effect on their socioeconomic wellbeing.

5.4 Area for further studies

There is a need to have research conducted to investigate the factors that contribute to the choice of healthcare services from providers. This will appraise the stakeholders on the gaps that exists between the different stakeholders which influences the choice and

address them to benefit the residents. A comparative study should be done to find out the similarities and differences between the public and private providers regarding the availability of resources and organizational culture. The findings of this study may form the basis of reforms in the public sector. This aspect was not addressed because of how this study was conceptualized.

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APPENDICES

18.1 Appendix I: Questionnaire

Social demographic factors

1. Gender (tick where appropriate)

Status	Code
Male	1
Female	0

2. What is your age? ----------

3. Have you ever attended school and which level did you attain?

Education Status	Tick where appropriate
No formal education	1
Primary	2
Secondary	3
Diploma	4
University	5

1. What is your religion?

Religion	**Code**
No religion	0
Christian	1
Muslim	2

2. What is your marital status?

Status	Code
Married	1
Single (Never married, divorced, widowed, separated)	0

3. How many people live in your house----------

4. How many children are in your family? ----------

5. What is your main occupation?

Occupation	**Code**
Self employed	2
Formal employment	1
Unemployed	0

6. Have you ever suffered from an illness?

   Yes (1) No (0)

7. If yes in 9 above, which type of illness did you suffer from recently? ----------

   -

11 Categorization of the disease Communicable (1) Non communicable (0)

Where did you seek treatment?

S/No	Type of healthcare provider	Response	
		Yes	**No**
12	Public health facility	1	0
13	Private health facility (Private hospitals, Nursing homes, Private clinics and Company clinics)	1	0
14	Mission health facilities (Mission hospitals, Mission health centers Mission dispensaries and NGO clinics)	1	0
15	Community pharmacy	1	0
16	Lay care (Kiosk, Traditional healers, Village Health Workers)	1	0
18	None. The illness resolved	1	0

Why did you prefer to seek treatment from that health facility?

S/No	**Reason**	**Responses**	
		Yes	**No**
19	Cheaper	1	0
19b	How much did you pay for treatment (Ksh)----------		
20	Attended to in time	1	0
20b	How much hours did you take to be attended from arrival to exit ----------		

21	Positive attitude by the health provider	1	0
22	Near to my residence	1	0
23	Availability of drugs	1	0
24	Tidy environment	1	0
25	Diagnosis was explained to me	1	0
26	Given time to explain my problem	1	0
27	Assured confidentiality	1	0
28	Good quality treatment		

29. Do you have an insurance policy? Yes ( ) No ( )

30. If yes in(28), which health insurance policy do you subscribe to?

Health insurance policy	**Code**
None	0
Public (NHIF)	1
Private	2
Both Private and Public	3

Appendix II: Informed consent

TITLE OF STUDY: **DETERMINANTS OF CHOICE FOR HEALTH CARE PROVIDERS IN INFORMAL URBAN SETTLEMENT IN KENYA: A CASE OF KARIOBANGI ESTATE**

Institution: The University of Nairobi, Kenya;

Principal investigator: Peter N. Karimi

Introduction: I am Peter Karimi from the University of Nairobi conducting a research on the determinants of choice for healthcare providers among residents of Kariobangi. Kindly assist me by answering the questions listed in the form I will give you.

Participation: Participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue your participation at any time without penalty or loss of benefits.

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Procedures to be followed: If you agree to participate, we will ask you some questions about your age, sex, occupation, residence, income, and health questions and fill the answers in the questionnaire.

Benefits: There is no immediate direct benefit but the findings may assist the government to improve health care provision.

Compensation: There is no compensation to volunteers for their participation and there is no risk of sustaining any injury.

Duration of participtionn: This study only requires the questionnaire to be filled. There is no follow-up or further information needed.

Who can participate in this study: All adults are eligible for enrollment, provided they agree to be part of the study.

Assurance of confidentiality of volunteer's identity: Records relating to your participation in the study will remain confidential. Your name will not be used in any report resulting from this study. All questionnaires and computerized records will contain only a unique study number, not your name. You will receive a signed copy of this consent form.

Persons and places for answers in the event of research-related questions: If you think you have a problem related to this study, please report to Peter N. Karimi, P.O Box 697-00516 Nairobi. Telephone 0722436019.

If there is any portion of this consent agreement that you do not understand, ask the field worker or investigator before signing.

I, _____ (Name) having full capacity to consent for myself do hereby consent to my participation in the research study.

The methods and means by which the study will be conducted have been explained to me by the investigator. I have been given the opportunity to ask questions concerning this investigational study, and any such questions have been answered to my full and complete satisfaction.

I understand that I may at any time during the course of this study revoke this consent and withdraw myself from the study without prejudice.

Subject's Signature: _____ Date: _____

Permanent Address: _____

Witness's Name: ___ _____

Witness's Signature: _____