

Factors Affecting Out-Of-Pocket Medical Expenditure Among Out Patients in Hospitals in Nairobi County

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Abstract- Several studies have brought up the following variables as determining factors of out of pocket health spending such as income levels, employment status, cost of medical services and access to health financing/health insurance. This study's specific objectives include: to investigate, examine and establish the association between income levels, employment and cost of treatment and access to health insurance/ health insurance status on Out-of-Pocket medical expenditures among out patients at the following selected health facilities in Nairobi county Kenya. A mixed research design technique was used to collect data which involved the use of both primary and secondary data sources. A structured questionnaire was used to collect primary data. Data collected for this study was analyzed using both qualitative and quantitative techniques with SPSS software. The target group of this study was the prior mentioned hospitals. The accessible population of the study was 115 respondents. The study's pilot test results indicate that the survey instruments were reliable and consistent. The response rate was 100% with 59% of the respondents being male and 41% of the respondents being females. A regression model was estimated where the associations between the regressor Y i.e. out of pocket medical expenditure and X_1 : Household Monthly Income (Independent Variable), X_2 : Duration of Occupation (Independent Variable), X_3 : Household Cost of Medical Services, and E_t : Stochastic/Error term were estimated. The summary findings were thus (holding other factors constant); - For every Kshs increase in household monthly income, out of pocket medical expenditure rises by Kshs 0.25 on average; for every incremental month of occupation duration from the time of the study, out-of-pocket medical expenditure was reported to decrease by Ksh 705.574 on average; for every Kshs increase in household costs of medical services, out- of- pocket health expenditure reduces by Kshs 0.211 and the presence of health insurance reduces out-of pocket health expenditure by Kshs 8,099.973 on average.

Index Terms- Employment Status, Health insurance, Cost of treatment, Out of pocket Health expenditure

I. INTRODUCTION

According to the WHO (2010), Out-of-Pocket medical expenditure is defined as the direct outlay by households including gratitude's and in kind payments to health practitioners and pharmaceutical suppliers and the purchases of goods and services whose main intent is to contribute to the restoration on the enhancement of the health status of individuals and

population groups -which is described as a component to private health expenditure.

Xu et al, (2003), postulates that Out-o f-pocket health care expenditure, where individuals and households pay for health care out of their own resources, is an important feature of health care systems all over the world. The impact of health care financing systems on the welfare of households, particularly poor households is mainly regarded as an important issue encountered by policy makers when developing healthcare systems and insurance mechanisms. In most low and middle income countries, private Out-of-Pocket health expenditure accounts for 20% to 60% of National Health Expenditure while in most developed economies, this amount accounts for only 15% to 25% of the same (WHO, 2010). Organization for Economic Cooperation and Development, (2012) reveals that there exists three main ways in which health care is financed in any country in the world and they include: Tax based financing through public health insurance schemes and through private funds such as Out-of-Pocket medical expenditure and donor funds. Zikusooka et al (2009) posits that healthcare financing in East Africa is heavily dependent on donor agencies with very few mechanisms existing for pooling and risk sharing.

Out-of-Pocket healthcare expenditure remains one of the most typical means of financing health expenditure around the world and more specifically in developing countries where access to financial protection provided by health insurance is minimal due to low income levels by citizens. This situation is made worse by the fact that in some countries, the burden of Out-of-Pocket spending creates barriers to health care access and use.

According to Hoffman et al (2005) and Banthin et al, (2008), households that have difficulty in paying medical bills tend to forego health care services. In contrast to publicly-funded care, Out-of-Pocket payments rely on the ability to pay. If the financing of health care becomes more dependent on Out-of-Pocket payments, its burden is, in theory, shifted towards those who use the services frequently, and possibly from high to low income earners, where health care needs are higher (Banthin et al, 2008).

Most industrialized countries have exemptions and caps to Out-of-Pocket payments for lower income groups to protect healthcare access. Switzerland for example has a high proportion of Out-of-Pocket expenditure with cost sharing exemptions for large families and social assistance beneficiaries among others (Paris et al, 2010). In Netherlands, households in the lowest income category spend up to 6.5% of their disposable income on Out-of-Pocket payments whereas the high income category groups spend up to 1.5% on the same (Westert et al, 2010). In Turkey, the 2006 Household Budget Survey indicated that Out-

of-Pocket spending was reasonably progressive in that low income families ended up spending 3.4% of their household income on healthcare services whereas the high income households spent about 4.2% on the same (World Bank, 2008). In America, one in six American families experience high Out-of-Pocket healthcare spending especially the disabled and elderly headed households. These costs tend to escalate over time due to chronic illnesses and one off events such as injuries and accidents especially among non-insured households. The most vulnerable group to high medical costs was found to be the low income families with 25% of the families stating that they spend more than 5% of their total household income on medical care services. According to Merlin (2002), 28% of Americans living in low income households spend more than 10% of their disposable income on health services and health insurance premiums. According to Banthin et al (2008), low income households pay high Out-of-Pocket payments in relation to their income with prescription for drugs constituting the biggest share. Health financing difficulties and high outlays has been observed to contribute to the very wide gap between healthcare needs and access. This forces individuals to go without medical care since cost of medical services imposes a too significant strain on household's income which forces sick individuals to forego healthcare services (Merlin, 2002).

In Kenya, for instance; the financial benefits of health insurance are insignificant to the majority population considering the vast difference between minimal premiums available in the market and the Out-of-Pocket health expenditure that an average Kenyan spent on an annual basis. On average the cost of outpatient visits were estimated to be a per-capita annual average of Kshs 328 Nationally in 2007 whereas a similar wide variance was observed comparable to the first study in 2003 that is; in Nairobi the average annual Out-of-Pocket expenditure amounted to Kshs1, 089 per annum versus Kshs159 per annum for North Eastern (MOH, 2007). According to Open Capital Advisors (OCA) in their assessment of the Kenyan health insurance industry, the cost of an average health insurance cover premium amounts to Kshs30,000 a year an amount way above the average Kenyan's annual health spending and an amount that equates 33% of annual per capita income.

In relation to the association between Out-of-Pocket health payments and health care costs, the American Association of Retired Persons (AARP) report found that Out-of-Pocket medical spending increased with the degree of infirmity and the treatment costs involved with the disease. Persons who reported to have good health spent on average \$3,905 compared to those in poor health who spent an annual average of \$5,468 while those who reported cancer spent \$6,370 an expensive disease but less expensive than Alzheimer's disease at an annual, average, Out-of-Pocket spending of \$7,670 (which involves more nursing assistance) (AARP, 2006). In Kenya, an increased prevalence of expensive chronic conditions is resulting in skyrocketing health costs due to among others low limits on insurance covers and the prevalence of co-payment terms. One of the greatest emerging chronic diseases is renal disease such as kidney diseases. One dialysis session costs about Kshs 9,000 and Kshs1.5 million for a kidney transplant in private health institutions whereas in public health institutions the services are a bit cheap at Kshs 2,000 per session and about Kshs 500,000 for a kidney transplant

considering the fact that Kenya's per capita income is Kshs 146,600 or the equivalent of \$1,800 (The People, September 4th 2013). This implies that the average cost of renal treatment in the cheapest facility is 341% of average income in Kenya (The People, September 4th 2013).

On the other hand, Cancer patients in Kenya pay an average of Kshs 300 per session on cancer treatment, translating to an estimated Kshs 1,500 a week in a public hospital. In contrast, Private Hospitals in Kenya charge Kshs 80, 000 per Week. For solid tumors, where tests may include but are not limited to CT Scans, Magnetic Resonance Imaging procedures (MRI) and biopsy costs of between Kshs 10,000 to Kshs 30,000 per session (Neondo, 2012).

With insurance maximum cover limits averaging Kshs 5 million with adult members paying Kshs30, 000 annually and Kshs 20,000 for dependents, payments exceeding such thresholds are always met by Out-of-Pocket spending in the instance of chronic conditions.

The employment and education status of an individual or household tends to affect their Out-of-Pocket medical expenditures. An educated household (probably earning higher incomes and more likely to be employed) may make more effective use of modern medicine and is less likely to incur large expenditures on self-medication and traditional therapies. In all cases, households with a working head are 14%-63% less likely to incur catastrophic payments (O'Donnell, 2005). Although it was argued that education is a proxy for lifetime income or wealth and that it reflects a negative effect of wealth on health expenditures through better health; -The argument holds to the extent that our measure of living standards that is; current consumption – does not reflect lifetime income due to constraints on the inter-temporal smoothing of consumption (O'Donnell et al, 2005). Since they were controlling for total consumption, they suggest that this phenomenon is probably attributable to health expenditures incurred where a head of household cannot work due to sickness. In Bangladesh and India, waged labor, as opposed to working in the household farm or business, was associated with a higher incidence of catastrophic payments. Locally, according to the World Health Organization a working person in Kenya was observed to be 8.02% more likely to have health insurance with NHIF and 0.27% with a private health insurance scheme (Xu et al, 2006).

Several factors exist which affect Out-of-Pocket medical expenditure among out patients in hospitals in Nairobi County and Kenya in general. Chief among the factors include; the level of disposable income earned by an individual or household, the employment and educational status of an individual; the number of dependents an individual has; the cost of medical services and the availability of insurance covers among others. This study dug in and investigated the factors that affect Out-of-Pocket medical expenditure among out patients in hospitals in Nairobi County. Out-of-Pocket medical expenditure is a term that is generally understood to refer to health spending that is not covered by a healthcare plan such as; a private health insurance cover, or a public health scheme (Merlin, 2002). In most developing countries, the cost of out-of-pocket medical expenditures is way too high and this tends to push majority of the population who cannot afford it towards poverty.

Various aspects of the contributing factors to out of pocket health expenditure have been investigated before such as the correlation between out of pocket health expenditure and insurance such as Merlin (2002) did in his study titled “ Family Out of pocket Health Care Spending;- A Continuing Source of Financial Insecurity” observed that families with lower incomes such as retirees are often faced with catastrophic type Out-of-Pocket medical payments (defined in his study as payments on health above 10% of income) and Mutyambizi (2002) In South Africa did such that in his study titled “Promoting Equitable Health Care Financing In The African Context: Current Challenges and Future Prospects” a correlation between employment status and out-of pocket medical expenditure was observed such that it was found out that health financing alternatives are concentrated among more wealthy South Africans typically in urban areas and formally employed.

According to an Open Capital Advisors (2012 report titled “The Next 33 Million”;- 33 Million Kenyans lack any type of health insurance coverage. This is mainly attributed to the inability of self employed and un employed citizens who are the majority to register and acquire covers from the National Health Insurance Fund (NHIF) due to their razor thin income levels. In Kenya, there exists an un-insured and under-insured Kenyan middle numbering 10 million -out of an estimated 18 million middle class population who cannot afford current private insurance products with the average premiums on private health insurance covers estimated at 33% of average annual incomes (OCA, 2012). This existing income-out of pocket health expenditure cause-effect dynamic is seconded by Dana’s, (2009) study titled “ The Unsustainable Cost of Health Care” which established that rising personal income leads to higher spending on health care because medical care is a desired service. As individuals become better off financially, spending on extending life and improving health and well-being becomes more attractive than spending on other goods.

None the less, notwithstanding all the above described factors, no studies have purely focused on the Factors that affect out-of-pocket medical expenditure among patients in hospitals with particular attention to; income level of patients, employment status of patients and the cost of medical services incurred by patients in Kenya. Therefore, this clearly depicts that studies which tend to focus on patients financial well being are quite unequalled due to the hardships that patients often go through during sickness. Therefore, this study set about to delve into the Factors that affect Out-of-Pocket Medical expenditure among patients in hospitals in Nairobi county which over the years has stayed on un-researched.

The general objective of the study was to investigate the factors that affect Out-of-Pocket medical expenditure among out patients in hospitals in Nairobi County. The specific objectives were: to identify the association between household income levels and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County, to examine the association between employment status and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County, to establish the relationship between cost of medical services and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County and to determine the association between health Insurance status

and household out-of- pocket medical expenditures among out patients in Nairobi county.

The results of the study will benefit the following: Private Researchers, who will use it as a reference for different studies, and by enabling the development of more studies under the field of factors influencing Out-of-Pocket Medical Expenditure; Health Patients who will be enabled to make informed decisions on medical financing with regards to the different health insurance schemes which exist in the country; The Government (MOH, NHIF) by enhancing public policy utility to the NHIF and MOH through the provision of research findings on the factors that influence out-of-pocket medical expenditure among health seekers specifically out-patients who are the most typical health seekers in Kenya and then Policy Makers by ensuring that they understand factors which affect out-of-pocket medical spending so as to make judicious policies which will have robust impacts on the society.

The study covered approximately 10 of the 34 registered Private and Public Hospitals by the Ministry of Health operating in Nairobi County according to MOH, 2008. The accessible population (respondents) of the study was the Out-Patients who were expected to visit the 10 Hospitals.

II. LITERATURE REVIEW

1.1 Theoretical Review

1.1.1 Theory of Elasticity

The factors that affect out-of-pocket medical expenses will be explained by use of elasticity theory. According to (Jacob Ramskov, 2001) elasticities examine how sensitive the demand for a good or service is to changes in price of the good or service itself or to changes in the price of related goods or services and to changes in income. According to (Campbell, 2008) the demand for goods is a function of several factors and not only price. The concepts of elasticity include: Own price elasticity, Income elasticity and Cross-Price elasticity (Jacob Ramskov, 2001).

The concept of own price elasticity is also referred to as price elasticity. It illustrates the percentage rise in the demand at a percentage rise in the price of a good itself. Simply put, own price elasticity shows the responsiveness of the demand of a certain good to changes in its own price (Campbell, 2008).

Demand curves generally have negative slopes as the Law of Demand states when the price of a good increases, the demand of the good decreases. Price elasticity of demand is computed as the percentage change in quantity demanded divided by the percentage change in the price of the same good. According to (Campbell, 2008), own price elasticity of demand results may be Elastic, In-Elastic, Perfectly Elastic, Perfectly In-Elastic and Unitary Elastic. An elastic demand occurs when the elasticity value is greater than one, so that the quantity moves proportionate more than the price. Demand is In-elastic when the elasticity result is less than one, meaning that the quantity of demand moves proportionately less than the price. In other cases, elasticity of demand result will be one or unit implying that the quantity moves the same amount proportionately as the price. In extreme cases where elasticity is zero, demand is normally said to be perfectly inelastic and it is drawn vertically. In this case, no matter how the price changes,

the quantity of demand remains constant. This when shown graphically normally illustrates the demand curve becoming flatter and flatter as the elasticity rises. Conversely, demand is perfectly elastic when the price elasticity of demand approaches infinity and the demand curve becomes horizontal, reflecting the fact that very minute changes in the price lead to significant changes in quantity demanded.

The concept of income elasticity of demand is used to measure how the quantity demanded changes as the consumers income changes. This is computed as the percentage change in quantity demanded divided by the percentage change in income. The concept of income elasticity of demand describes the nature of goods as either normal or inferior. Most goods are normal if the rise in income of consumers leads to the rise in quantity demanded of the good itself since income and quantity demanded tend to move in the same direction and thus are directly related having positive elasticities. The demand of inferior goods on the other hand tends to decrease with the increase in the income of consumers. Thus, the demand for inferior goods move in the opposite direction with an increase in consumers income and thus they normally have negative elasticities.

The concept of Cross-price elasticity of demand measures how the quantity demanded of one good changes as the price of another good changes. It is measured as the percentage change in quantity demanded of good A divided by the percentage change in the price of good B. Cross price elasticity of demand describes whether two goods are either substitutes or complements. Substitutes are goods that are typically used in place of another where as complements are goods which are typically used together. For substitute goods, the cross price elasticity of demand result is always positive and thus the increase in price of good A, will lead to the increase in consumption of good B since consumers will find good B to be cheaper and affordable. For complement goods, the cross price elasticity of demand result is normally negative indicating that an increase in the price of good A reduces the quantity of demand of good B.

1.1.2 Theory of Income

Income is the consumption and savings opportunity gained by an entity within a specified time frame which is generally expressed in monetary terms. For the case of households and individuals, income is the sum of all the wages, salaries, profits, interest payments, rents and other forms of earnings received within a given period of time. Theory of income is normally explained by the concepts of Permanent Income Hypothesis and Relative Income Hypothesis.

According to Milton Friedman as cited in (Coastas, 2004) consumers always wish to smooth consumption and not let it fluctuate with short run fluctuations in income. Individuals/consumers base their consumption on a long term view of an income measure on a notion of lifetime wealth or a notion of wealth over a reasonable long horizon. According to his hypothesis, individuals consume a fraction of permanent income in each period and thus the average propensity to consume equals the marginal propensity to consume. The ingredients of Friedman's model of permanent income hypothesis are permanent income, permanent consumption, transitory consumption and transitory income. According to Coastas (2004) measured income is the sum of permanent and

transitory income and measured consumption is the sum of permanent and transitory consumption. The consumption plan of an individual does not depend on the transitory components and transitory components are uncorrelated to each other and uncorrelated to permanent components. Friedman shows that the slope coefficient of a regression of observed income leads to an underestimate of the marginal propensity and to a positive estimated intercept. Therefore, the rate of attenuation of the marginal propensity to consume is equal to the ratio of the variance of the permanent income to total income. Permanent income hypothesis shows that permanent income goes up and thus for a given level of observed income, permanent income is higher in later years than in earlier ones. In his explanation, Friedman stated that the joining of the average points of consumption-income across time recovers a function that implies the marginal propensity is equal to the average one the key point here being that average income reflects average permanent income since the transitory components averages out by law of large numbers. For example on an interpretation on why blacks save more than whites in America, Friedman observed that the former have lower permanent income than whites. Similar arguments can also be made when we compare the self employed to the salaried workers or farm to non-farm households, the first in each pair having larger transitory components to their income. The concept of Relative Income Hypothesis on the other hand states that the satisfaction or utility an individual derives from a given consumption level depends on its relative magnitude in the society for example, relative to the average consumption rather than its absolute levels. (Duesenberry J, 1949).

According to (Palley, 2008) the present consumption is not influenced merely by present levels of absolute and relative income, but also by levels of consumption attained in the previous period and it is difficult for a family or an individual to reduce the level of consumption once attained. This is because, the aggregate ratio of consumption to income is assumed to depend on the level of present income relative to past income.

Therefore, according to (Palley, 2008), relative income hypothesis maintains that consumption decisions are motivated by relative consumption concerns also known as keeping up with the Joneses. The theory also shows that consumption patterns are subject to habit and are slow to fall in the face of income reductions and therefore it is difficult for an individual to reduce his/her expenditures from a higher level than for him/her to refrain from making high expenditures in the first place (Palley, 2008).

1.2 Conceptual Framework

The conceptual framework depicts the relationship between independent variables which include income levels, employment status and the cost of medical services and the dependent variable which in this case is out-of-pocket medical expenditure. Figure 1 below shows the conceptual framework which will be relied upon in this study.

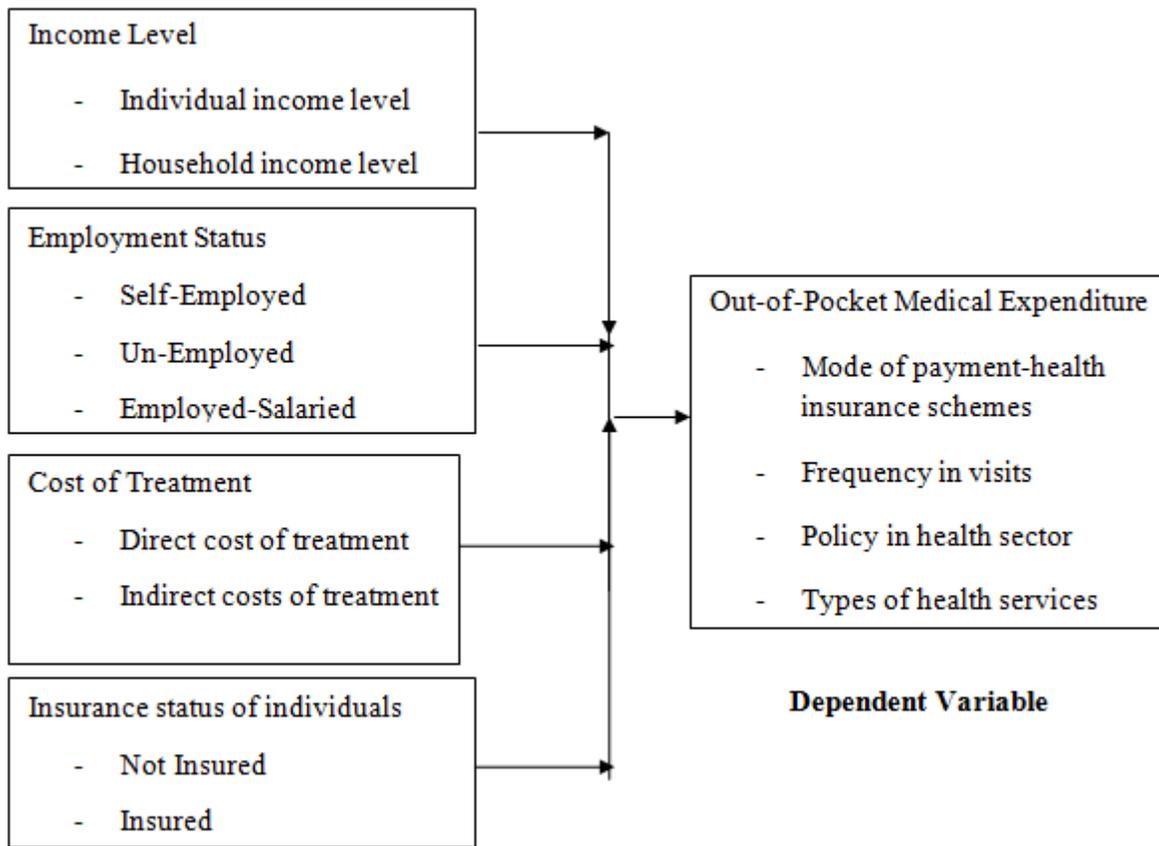


Figure 2.1: conceptual Framework

2.3.1 Income Levels of Individual/ Household head

In most of the world’s wealthiest countries, individuals pay few health care costs directly. In Germany, for example, where the GDP is US\$ 32,860 per capita, 11.3% of all medical expenses are borne by households and the rest by social health insurance or by the government. In the Democratic Republic of the Congo, by contrast, where GDP per capita is only US\$ 120, about 90% of the money spent on health care is paid directly by households to providers (WHO, 2012). From 1994-2013, out of pocket health expenditure has oscillated between 76.7% to 76.9% of private health expenditure. In Kenya, approximately 77% of household health expenditure is from out of pocket sources given that less than 8% of the Kenyan population is insured for health services (WHO, 2012). Being that studies related to out of pocket health expenditure are often primarily interested in the effects of health insurance membership on Out of Pocket payments i.e. payments for health care made by households at the point of receiving health services. It is a priori expectation that health insurance membership should significantly reduce the level of OOP, given use (Merlis, 2002).

Out of pocket medical expenditure may reach a non-trivial share of overall expenditures; especially for low-income families even among insured families, on average, half of total MOOP spending is on health insurance premiums (Banthin et al., 2008). In some cases, health events may result in high non-premium out of pocket medical spending regardless of health insurance coverage status. For example in a United States study researchers

estimated that approximately half of all U.S. bankruptcies in 2001 involved medical debt and approximately 75 percent of the people affected had health insurance coverage at the onset of their illness (Himmelstein et al., 2005). On the other hand, others have identified correlations with health events and significant wealth losses (Cook et al., 2010; Smith, 1999). In short, medical out of pocket expenditure has been observed to lower family resources such that available income for food and shelter decreases –namely, these components used to measure poverty status decrease as medical out of pocket expenditures rise.

Research indicates also that the poor are less likely to report illness than the rich such that for both chronic disease and acute illness, individuals in higher consumption quintiles are more likely to report illness. While one would expect higher reported illness among the poor due to living conditions and exposure findings are that the poor are underreporting their actual illness. One explanation is that the wealthy and better educated have better information about their health through personal knowledge or through better access to medical care (AIID, 2011).

Given this reality, the private sector is more at the forefront of innovative solutions counter this problem with communication service providers teaming up to hedge low income earners from the damaging effects of out of pocket medical spending through micro insurance. One of Kenya’s leading insurance companies BRITAM has partnered with Kenya’s largest mobile operator, Safaricom and microfinance Changamka in recognition of this correlation between low income and catastrophic health

expenditure and announced the launch of a 'micro-insurance' healthcare product for users of M-Pesa –the most wildly popular mobile money solution to launch a medical insurance product called Linda Jamii which is to target around one million subscriptions, mainly in low-income areas using the M-Pesa platform as its premium collection platform.

Customers will be able to subscribe to the insurance service at “an annual premium of Kshs12 000 [about US\$140] for cover worth Kshs290 000 [about US\$3500].” Linda Jamii will cover everything from dental to maternity, optical, in-out patients, and hospital and funeral expenses. It is currently only available in Nairobi but Safaricom plans to have it across the country by the end of the year, providing access to 1000 hospitals (Ventureburn, 2014).

Income does also play a role in disease incidence and by extension out of pocket health expenditure incidences. The likelihood of spending a high share of income on Out of Pocket health costs drops as income rises. This is not surprising: If two families with different incomes spend the same amount for medical care, the family with the lower income will have spent a higher share. However, it is also the case that low-income families are more likely to have health problems. Either because poverty contributes to poor health or because poor health reduces income (Merlis, 2009)

2.3.2 Employment Status of Individual/ Household Head

There are different approaches to social health protection, but all have one thing in common: they create a system, called a risk pool that allows a large group of people to share the risk that they may need expensive health care. That means funds dedicated for health care are collected through prepayment, and managed in such a way as to ensure that the risk of having to pay for health care is borne by all the members of a pool and not by each contributor individually. In a risk pool, at any given time healthy people who only need limited health care are subsidizing the sick, who will draw more heavily on available health resources (WHO, 2012).

Employer group coverage provides better financial protection than individual private coverage. Among families with insurance, those who are most at risk for high OOP costs are those with individual private coverage. These plans tend to have higher deductibles and coinsurance payments, and are less likely to cap patient liability for health care expenses or to cover prescription drugs. One of five families with private non group plans spends more than 5 percent of income on health expenses, compared with one of 12 families with employer coverage. Mark Merlis, 2009 study found that among those afflicted with high out of pocket expenditure, working families were not exempt.

The report finds that OOP spending on health care services remains a major source of financial insecurity for people with inadequate health insurance coverage. Those most at risk include Medicare beneficiaries, whose poor health and limited Medicare benefits can impose heavy financial burdens. Working families are affected too. While the growth of managed care brought them lower levels of cost-sharing and better financial protection, the rising cost of prescription drugs and rising premiums increasingly threatens this protection. At the bottom of the economic ladder, some families may be forced to forgo spending on necessities to meet the out-of-pocket cost of health care. And, while the uninsured are especially at risk, even those with

privately purchased individual health insurance can fall victim to burdensome outlays for health care or be forced to forgo needed care.

With regards to the employment status of individuals, Education levels, a determinant of employment has been found to increase the probability of taking up insurance of all types with more educated individuals intending to insure. The results are in line with the hypothesis that educated people have the ability to not only to acquire skills and knowledge but also to make informed choices on health related matters among them purchase of health insurance to avoid catastrophic health expenditures. This important role played by education is well documented by Grossman (1972). Similar results were obtained by Kirigia et al., 2005; Kidd and Hopkins, 1996; (Nketiah-Ampomensah, 2009) and Bourne and Kerr-Campbell, 2010 among others. The results however indicate that education is most responsive in mutual schemes. Also, it is realized that individuals taking up private insurance belong to the highest wealth index, are relatively older with a higher awareness and the highest education level than the rest (that is, employed individuals stereotypically) while those Individuals taking up no insurance or mutual community schemes belong to the lowest education level than the rest (that is, stereotypically the unemployed).

In many lower- and middle-income countries, private insurance may be the only form of risk pooling available and it usually provides principal coverage to those in the formal sector, with private policies frequently subsidized by employers. Historically, this is not unlike the situation in Western Europe in the nineteenth century when the only significant forms of insurance were provided by mutual associations, employers, guilds or unions - on a voluntary basis. For example, 10% of Sweden's workforce was covered by voluntary private insurance Schemes called "Friendly Societies" in 1885. In Germany, Bismarck established the first national social insurance system by knitting together voluntary pre-existing occupationally and industrially based sickness funds (WHO, 2004).

2.3.3 Cost of Health Services

The quantifiable costs associated with human disease and illness -are typically categorized into direct and indirect costs. Direct costs represent the costs associated with medical service utilization which includes the consumption of in-patient and out-patient pharmaceutical services within the health care delivery system. The term indirect costs on the other hand is representative of the expenses incurred from the cessation or reduction of work productivity as a result of the morbidity and mortality associated with any given disease. Indirect costs in this case consist of work loss, worker replacement, reduced productivity from illness and disease (Bocuzzi, 2003).

Serious health problems lead to serious out-of-pocket expenses. Families that have a member with any health problem are twice as likely as other families to spend a high portion of their incomes on health services. Chronic conditions place families at the highest risk. For instance, 25 percent of families reporting a member with heart disease also report spending more than 5 percent of their income on OOP expenses. Other conditions especially likely to lead to high OOP costs include diabetes, mental disorders, Employer group coverage provides better financial protection than individual private coverage. Among families with insurance, those who are most at risk for

high Out of Pocket costs are those with individual private coverage. These plans tend to have higher deductibles and coinsurance payments, and are less likely to cap patient liability for health care expenses or to cover prescription drugs. One of five families with private non-group plans spends more than 5 percent of income on health expenses, compared with one of 12 families with employer coverage. (Merlis, 2002)

One of four families with a serious health problem who are covered by private individual insurance is at risk for high outlays. Health insurance does not necessarily protect families against the high costs of getting sick, especially if the coverage is private individual insurance. Twenty-seven percent of families with serious health problems who are covered by private individual insurance spend 5 percent or more of their incomes on OOP costs, compared with 13 percent of families with serious health problems who are covered by employer group insurance. Poverty and poor health multiply exposure to high health costs. Among families with serious health problems, low-income families face an especially high hurdle when it comes to OOP expenses. One-quarter of families with any health problem and incomes below 200% of poverty spend 5% or more of their incomes on OOP. (Merlis, 2002)

As with the analysis of health care utilization, outpatient and inpatient care are analyzed separately. Individual, household and geographical factors are controlled for, with similar rationales for inclusion as in the models discussed so far. We expect those with higher income, chronic health conditions, aged greater than sixty-five, living in urban areas, including Nairobi to have higher OOP. For those living in urban areas and/or Nairobi, this could also reflect the availability of services of higher quality as well as supplier induced demand. Those aged less than five are expected to have lower OOP, because of special government policies for this age group. Two additional variables are included, related to facility ownership. It is expected that private health facilities charge higher user fees than both mission and public health facilities. We are also interested in comparing public and mission facilities to see if there is a significant difference in the user fees charged. Further factors expected to have an effect on the probability of both NHIF and other insurance membership include household income, the education level of the household head, the sex of the individual, severity of disease, and the presence or availability of health insurance schemes at provincial level. For all of these factors other than health insurance availability, their positive effects will be qualified to some extent by the compulsory nature of the NHIF. For severity of disease, this is further qualified by likely risk selection by private health insurers. (Ke Xu, 2006) (O'Hara, 2010).

Due to the lack of robust primary data required to estimate the indirect cost component of health services, most studies use bench mark or normative data to estimate indirect costs. Indirect costs are thus more difficult to quantify because of a lack of quality data despite the fact that they represent up to 150% of the total economic burden associated with disease e.g. the cost of lost work days, economic death due to morbidity, the costs of labor substitution, the costs of children dropping out of schools to become caretakers, the costs of lost leisure days and the costs associated with declined life quality (Bocuzzi, 2003).

2.3.4 Insurance Status of Individuals

Insurance uptake is for the purpose of curbing the catastrophic potential of out of pocket health expenditures however among the very low income groups in society, this type of expenditure has been observed to be on average less than an insurance policy would cost. Kiplagat, 2013 conducted a study on the factors that affect the demand for health insurance in Kenya. Despite the protection insurance offers to households in preventing catastrophic out of pocket expenditure and to mitigate out of pocket costs of medical services, his findings were that a vast majority of the Kenyan population remains uninsured. Among the factors that this study identified as contributing factors to health insurance policy ownership were;- age, education, wealth and residency. If these factors influence health insurance uptake, it is then conceivable that they influence out of pocket health expenditure as well. Their findings on this phenomenon were thus;- The effect of age on demand for health insurance is positive across all forms of health insurance schemes indicating that purchase of health insurance relative to being uninsured increases with age. (Kiplagat, 2013)

Since economic theory predicts that stock of health depreciates at a decreasing rate with increase in age it is evident that as individuals health naturally declines, their out of pocket expenditure on health will increase especially if they are uninsured. However, due to the health increasing benefits of health insurance such as lower net cost of health care services, older individuals thus tend to increase their investments in health (health insurance included) in order to decrease the rate of health depreciation. This could be confounded by other variables such as education and income which are likely to increase with age. These particular results were found to be similar to those by Kirigia et al. (2005) in South Africa, Bhat and Jain (2006) in Gujarat, (Gius, 2010) in the US and Owando (2006) in Kenya among others. Conclusively, older people in Kenya were observed to be more likely to choose NSSF (which is statutory) and private schemes (which they can afford in agreement with life-cycle hypothesis). We also note that the age variable is not statistically significant for mutual health insurance scheme.

In relation to gender and insurance status;- Gender was found to have a significant bearing on choice of insurance schemes. To begin with, males formed the majority of respondent without cover, indicating their risk taking behavior. Another study by (Bourne, 2010) in Jamaica determined that health insurance coverage is partly a function of the number of males in a household. And choice of insurance schemes discriminates against gender with males preferring private options whereas females have preference for mutual/community and employer-based schemes. Mutual schemes are based on trust and it connotes that this aspect plays a role in determining female choice of health insurance cover. Access to media was also found to have a significant effect on health insurance take up.

Similarly with other studies a similar effect was observed such as Nketiah-Amponsah's (2009) study in Ghana and Bhat and Jain (2006) in Gujarat realized that awareness and knowledge about health insurance were significant determinants of health insurance coverage. Similarly, the study by (Matheuri, 2008) on demand for Social Health Insurance of informal sector workers in Kenya established that lack of information was a major barrier to enrolment. Access to information therefore

becomes a vital component of increasing uptake of health insurance cover.

Wealth index, Income and Employment Status were also observed to have an impact on out of pocket health expenditure. Those in the poorest wealth index are less likely to take health insurance. A rise in wealth index significantly increases the odds of choosing all the four types of insurance scheme. This is an indication that health insurance is a normal good also notice that wealthier people will choose private schemes more than any other option. The findings concur with those by (Paul A. Bourne, 2010) that the employed are more likely to be covered by mutual and NHIF than private and NSSF. Obviously, employees are twice likely to choose employer based cover than their unemployed colleagues which is because employers are mandated to insure their workers.

Studies have established that larger sized households associate more with NSSF and mutual fund schemes whereas smaller households associate with private schemes in agreement with previous works. For instance, (Bhat, 2006) who studied factors which affect the decision to purchase insurance as well as the amount of health insurance bought in micro health insurance scheme settings of Gujarat found the number of children to be an important determinant. The findings however differ from those of (Kirigia, 2005).

Rural residents on the other hand are more likely to be in mutual and statutory schemes. Kenyan villages have more tendencies for residents to come together in social self help groups which explain their preference for mutual cover. Concerning statutory cover, NHIF has in last 5 years done aggressive marketing in the villages which has increased coverage there. Urban residents are most likely to be in private health cover, perhaps because they can afford it. Residence has been found to determine choice of health insurance by previous works as observed in the Chilean study by (Torche, 2001)

2.3.5 Out of Pocket Health Expenditure

Health expenditure can be categorized as out-of-pocket payments and prepayments. Out-of-pocket payments refer to the payments made by the patients at the point of receiving services (WHO, 2011).

Out of pocket health expenditure is common to a large extent all over the world. It is not a problem that some out of pocket health expenditure exists rather the proportion of out of pocket health expenditure relative to total private health expenditure is the concern of both policy makers and policy researchers. High user fees and other out-of-pocket payments (OOPs) have negative impact on the access to and utilization of health care services in Kenya (MOH, 2007).

The majority of the population cannot afford to pay for health care, the poor are less likely to utilize health services when they are ill, and wide disparities in utilization exist between geographical regions and between urban and rural areas (MOH, 2007). This is due in part to the complex interaction between income levels, employment status, insurance status and residency /geographical location, location related costs of medical services etcetera. Socio-economic and geographic inequities are wider for inpatient care than outpatient care. Those who pay for care incur high costs that are sometimes catastrophic and adopt coping strategies with negative implications for their socio-

economic status, while others simply fail to seek care (Chuma and Okungu, 2011).

The Kenyan government has encouraged the development of the private health sector, a move that has seen an upsurge in private health care providers in the country as many such providers have come up to respond to the high demand for health care. Since the introduction of user fees for medical services in the 1980's, public hospitals have been perceived to offer low quality care hence;- a significant population of people have since opted to pay for private health care services that have since been perceived to be of better quality. The private sector has since grown in Kenya, owning 49% of health service facilities and growing while regulating it remains a major challenge (Chuma & Okungu, 2013); (MOH, 2008).

The very fact that income, employment, access to health financing and affordable healthcare services are equity concerns that affect health equity, a series of reforms are under way to address equity challenges in the Kenyan health system. Key among these reforms is the development of a health financing strategy and the sector plan for health (GOK, 2010) (MOH, 2010). Since these concerns (Income constraints, unemployment and under employment, lack of health financing options such as health insurance and high costs of health services) all contribute to health access inequalities as a result of high out of pocket health care costs, thus as evidenced by these strategy documents there is a movement of government health policy towards an equitable financing system. This is documented by the policy options and highlights of priority health sector reforms for achieving universal health coverage such that the specific actions highlighted in the strategy include: implementing a national health insurance scheme; channeling funds directly to health facilities without passing through the district; increasing resources to underserved and disadvantaged areas and; scaling up the output based approach of financing (OBA) to include a range of health services (currently OBA in Kenya focuses on reproductive health services) (Chuma & Okungu, 2013)

1.3 Empirical Review

In this processes of financially costing a disease and determining it's private costs i.e. individual or household costs of a disease such concepts emerge such as;- catastrophic health expenditure which occurs when people spend a disproportionate amount of their income (sometimes non-food expenditure) on the condition. (Xu et al. 2003) Despite this, a great variety of specific definitions for catastrophic health expenditure have been utilized since although the theory is agreed upon, the exact constitution the concept in explaining disease burdens on households such that the thresholds for determining a disproportionate level of expenditure vary from 10% to 60%. (Sun et al, 2009) Some studies on the other hand deviated from this more standard approach of describing large proportion of health expenditure relative to income such that for instance; Mukherjee et al used the concept of "high health care expenditure" instead of catastrophic health payments. In this study, a household was identified as having incurred high out-of-pocket expenditure on health care if its annual health care expenditure was high in comparison to those of other households within the same caste group in India (Mukherjee et. al, 2011).

In regards to out of pocket medical expenditure for medical services a survey conducted by (Margaret Perkins, 2009),the

majority of interviewed women reported paying out of pocket for facility based delivery services. This findings related increased out of pocket health services to the use of middle and upper tier health facilities such as health centers and hospitals as well as to the utilization of private and mission owned health facilities that required the full medical costs to be covered by the patient or their private insurer at the time of the survey. Out of pocket costs were highest in Kenya with a mean cost of \$18.4 and 98% of women who had to deliver at a health facility had to pay some user fees.. In Burkina Faso, 92% of women reported paying user fees at a mean amount of \$7.9 and in Tanzania, the lowest user fees were reported at a mean \$5.1 - 91% of women reported paying user fees (Margaret Perkins, 2009).

In the 2006 survey, the majority of births in Tanzania (56%) took place in health facilities, whereas in both Burkina Faso and Kenya, 45% and 33% of births, respectively, took place in health facilities. Among women who delivered outside the health system, the primary reason given for delivering at home was lack of time to reach a health facility. In Burkina Faso and Tanzania, the majority of institutional deliveries took place at government health facilities; relatively few births took place in private or mission health facilities (16% and 11%, respectively). However, in Kenya, 28% of institutional deliveries were at private or mission facilities. In all three countries in both surveys, almost all women who delivered at a facility reported that they had to pay some costs, and these costs were not significantly different between wealth quintiles. In the 2006 survey, the majority of births in Tanzania (56%) took place in health facilities, whereas in both Burkina Faso and Kenya, 45% and 33% of births, respectively, took place in health facilities. Among women who delivered outside the health system, the primary reason given for delivering at home was lack of time to reach a health facility. In Burkina Faso and Tanzania, the majority of institutional deliveries took place at government health facilities; relatively few births took place in private or mission health facilities (16% and 11%, respectively). However, in Kenya, 28% of institutional deliveries were at private or mission facilities. In all three countries in both surveys, almost all women who delivered at a facility reported that they had to pay some costs (Margaret Perkins, 2009).

In addition to direct financial expenditures attributed to medical services, the overall cost of treatment was also attributed to among other factors indirect expenses such as;- the cost of transportation to a health facility (McIntyre et al, 2006). There also exist the additional cost lost wages among other indirect costs have been observed to have a direct impact on treatment costs being that they often exceed the cost of medical services. (Mcintre et al, 2006).

With regards to out of pocket health spending between income groups (richer and poorer households) in such a way that conducted studies found that poorer households spend a higher proportion of their income on care for diabetes than richer households. These differences may (Elrayah H, 2005) be so intense that one study from India found that in urban areas, the share of income spent on diabetes care in the poorest households was seven times that of the richest households (Ramachandran A, 2007) On chronic illnesses such as diabetes it was observed that a considerable share of health expenditure relative to overall household spending was observed such that a study in Sudan

reported that on average 65% of household health expenditure was spent on caring for a child with diabetes Medications are frequently found to be the largest component of expenditure on diabetes (Falconer et al, 2009).

Spending on medications represents from 32% to 62% of total expenditure on diabetes care in various country settings such as India, Mexico, Pakistan and Sudan. As a ratio of income, a study on diabetics in rural Ghana reported that spending on insulin alone represented around 60% of the monthly income of those on the minimum daily wage (Aikins, 2005)

Concerning the cost of medical services it was found out that using originator-brand (non-generic) medication was found to result in much higher levels of medical spending in diabetes studies that used random sampling rather than convenience samples. A study in Yemen and Mali on the purchase of an originator brand medicine "Glibenclamide" (a medicine used to treat type II diabetes) found that in the private sector there was a potential to impoverish an additional 22% and 29% of the population, respectively, versus 3% and 19%, respectively, if the lowest priced generic product was purchased (Nuns et al 2010).

Other contributing factors observed with regards to treatment costs were laboratory and transportation costs which were often found to be the second largest component of expenditure. Such that some studies documented expenditure related to special dietary regimens (which were up to 20% of the direct costs in North India). Other factors that have been observed to contribute to additional expenditure are; the presence of complications and the duration of the illness which coincide with an increase of the direct costs. For instance, Khowaja et al. found that in Pakistan, the direct cost for patients with co-morbidities was 45% higher than the direct cost for patients without co-morbidities (Khowaja et al, 2007). Similarly, in India, those without complications were found to have an 18% lower cost compared to the mean annual cost for outpatient care for all patients with diabetes, while those with three or more complications had a 48% higher cost (Kapur, 2007).

In relation to income and coping strategies used by household which incurred particularly high out-of-pocket treatments costs, it had been observed in India, that the majority of patients (89%) used their household income to fund the monitoring and treatment of their diabetes, while household savings were used by 22% of retired patients and by 19% of those in the lowest income bracket. Additionally, when faced with hospitalization, 56% of patients had to dip into their savings or borrow in order to fund the costs. (Kapur,2007) Additionally, very few households are reimbursed by insurance such that in India, Kapur found that only 1% of patients claimed the costs of treatment on insurance (Kapur,2007) while Ramachandran et al. observed that medical reimbursement was obtained by 14.2% of urban patients but by only 3.2% of rural patients (Ramachandran et al, 2005) Moreover, Khowaja et al. found that in Pakistan, none of the persons with high cost chronic illnesses (diabetes) indicated that their cost was borne by an insurance company or their employer (Khowaja et al, 2007).

1.4 Critique of Existing Literature

Assessing out-of-pocket costs of health services is challenging and potentially sensitive— especially when medical costs differ markedly from official service delivery policies and norms. Several recent studies on out-of-pocket costs of maternity

care in low income countries in sub-Saharan Africa and Asia have consistently shown that out-of-pocket costs of maternity care vary considerably depending on the type of delivery (normal or complicated), as well as the type of health facility (public vs. private) and the level of the health system (Borghi et al. 2003; Levin et al. 2003; Borghi et al. 2006a; Borghi et al. 2006b).

In Ghana, Malawi and Ghana, for example, Levin et al. (2003) found that out-of-pocket costs for normal delivery (including user fees, travel costs and accommodation costs) ranged from US\$2.30–22.80 in Uganda, US\$0.40–7.90 in Malawi, and US\$12.60–20.70 in Ghana. Fees for complicated deliveries were considerably higher, ranging from US\$13–59 in Uganda to US\$68–140 in Ghana.

In other countries such as Kenya, Tanzania and Burkina Faso, physical access was an inhibitor to out of pocket health expenditure rather than financial access among those women who opted out of institutional/ facility deliveries. (Margaret Perkins, 2009).

1.5 Research Gaps

The major research gap in the researchers perception is the limitation of the few studies conducted in Africa is that they do not assess the implications of health care costs on national poverty estimates (Merlis, 2002). Assessing the determinants of out of pocket health care payments is key to determining the role of out of pocket health care spending on poverty. This is important for informing policy on the need to incorporate health financing designs in poverty reduction programs and for highlighting the urgent need to ensure that health financing systems offer financial risk protection. This paper contributes to the literature by assessing the association of these determinants (income levels, employment status, insurance status and cost of health services) on out of pocket health spending in Nairobi County, Kenya.

III. METHODOLOGY

1.6 Research Design

This research utilizes the mixed research design which involves using multiple ways in exploring the research problem such as; basing design on either or both perspectives; examining research problems or questions based on prior literature knowledge; collection of data using any appropriate technique and continual interpretation which can influence stages in research process (Mugenda & Mugenda, 2003). The reason for choice of mixed research design is to overcome the limitations of a single research design. According to (Mugenda & Mugenda, 2003) mixed research design often complements the strength of a single design, addresses different questions at different levels and addresses theoretical perspectives at different levels.

3.2 Population

(Mugenda & Mugenda, 2003) defines population as a complete set of individuals, cases or objects with some common observable characteristics. Researchers many times draw samples from the population from which generalizations are made. The target population of the study is be out-patients from the private and public hospitals operating in Nairobi County. The respondents or the accessible population of the study are out-

patients from 10 of the 34 selected public and private hospitals operating in Nairobi County (MOH, 2008).

3.3 Sample and Sampling Size

3.3.1 Sampling Frame

A sampling frame requires each member of the population under consideration to be known and identifiable (Francis A, 1998). Sampling frames indicate the listings of the population together with the certain characteristics of the population. According to Mugenda & Mugenda (2003) Gay suggests that at least 30% of the cases under accessible population are required for research. Therefore, this study used at least 30% of the accessible population which drew the sampling frame 10 out of the 34 public and private hospitals operating in Nairobi County. Table 1 below illustrates the sampling frame formulated by the study by visiting the different 10 out of 34 hospitals operating in Nairobi County. The study managed to establish that the estimate number of patients who visit the different hospital clinics on a monthly basis. This was achieved by conducting an interview in the different clinics. As illustrated in the sampling frame, there is an estimate of about 14,684 patients who visit the 10 selected hospitals on a monthly basis in Nairobi County.

3.3.2 Sample Size

Researchers are often encouraged to take a big sample size as possible where time and resources allow. Studies which normally use large sample sizes are often confident that if another sample of similar size were to be selected, findings from two samples would end up being similar to a high degree (Mugenda & Mugenda, 2003). However, as already mentioned, researchers are faced with challenges of time and resources in selecting large populations. Therefore, in this study relies on the following formula in Mugenda and Mugenda, (2003) in coming up with the sample size.

The sampling frame in Table 1 is indicates that the population is more than 10,000 individuals. Mugenda and Mugenda (2003) recommends that in such a case 384 of them should be recommended for as the desired sample size given that the Z statistic is 1.96 at 95% confidence level as shown in the following formula.

$$N = \frac{Z^2 Pq}{d^2}$$

Where:

N = The desired sample size (When population is less than 10,000)

Z = The standard normal deviate at the required confidence level

P = The proportion in the target population estimated to have characteristics being measured

q = 1-p

d = The level of statistical significance set

$$384 = \frac{1.96^2 (0.5)(0.5)}{(0.05)^2}$$

Since resources and time are a major constraint in deciding the sample size, the above procedure will help guide the study in determining the actual sample size. According to Gay as cited in Mugenda and Mugenda (2003) at least 20%-30% of the accessible population is normally required for descriptive studies

and 10% of the accessible population is required for experimental studies.

Therefore, as indicated above, the study being descriptive used a sample size of 30% of the desired sample size (384) as the actual sample size.

$$115 = 30\% \times 384$$

Therefore the actual sample size that the study considered was 115 respondents from the 10 public and private hospitals operating in Nairobi County.

This study used stratified random sampling as described in Mugenda and Mugenda (2003) to achieve the desired population representation from the 10 selected hospitals. As Sellitz, Weigtsaman & Cook (1976) argue in Mugenda and Mugenda (2003), every hospital clinic selected in this study was based on the relative variability of the characteristic under study in this case being the sample estimate number of monthly patients.

Table 3. 1: Sampling Frame

No	Name of Hospital	Name of Clinic	Location	Estimate No of Monthly Patients	Desired Sample Size	Actual Sample Size
1	Aga Khan University Hospital	Pediatrics Clinic	3rd Parklands Avenue	1,500	39	12
2	Guru Nanak Ramagarhia Sikh Hospital	Orthopedic Clinic	Muranga Road	275	7	5
3	Kenyatta National Hospital	Out Patient Department	Hospital Road	5,000	131	30
4	M.P Shah Hospital	Child Health Clinic	Shivachi Road Parklands	1,200	31	9
5	Mama Lucy Kibaki Hospital	Out Patient Department	Kangundo Road	500	13	5
6	Mater Hospital	Dental Clinic	South B Dunga Road	454	12	5
7	Mbagathi District Hospital	Aids Clinic	Mbagathi Road	2,450	64	19
8	Nairobi Hospital	Physiotherapy Clinic	Argwings Kodhek Road	200	5	5
9	Nairobi West Hospital	Out Patient Department	Ghandhi Avenue	855	22	7
10	Pumwani Maternity Hospital	Obstetrics & Gynecology	Pumwani	2,250	59	18
Total				14,684	384	115

3.3.3 Sampling Techniques

The technique that was adopted for this study was random sampling. This technique enables the study achieve a desired representation of the respondents from the 10 selected Public and Private Hospitals operating in Nairobi County. According to (Mugenda & Mugenda, 1999), there exist two types of random sampling which include Simple and Stratified Random Sampling. Stratified random sampling is ideal for this study since it ensures that subjects are selected in such a way that the existing subgroups in a population are reproduced in the sample. The study started first by stratifying the population from the 10 selected hospitals into partitions. This was followed by calculating the proportion of population in each partition and combining the results to obtain the actual stratified sample. Table 1 below illustrates the name of hospital, name of out-patient clinic selected, location of the hospital, the estimate number of patients who visit the selected clinics on a monthly basis and the desired sample size and actual sample size which was derived using stratified random sampling.

3.4 Data Collection Instruments

A structured questionnaire was used to obtain the data. The questions were in line with the study objectives as well as the

research questions. Section I of the questionnaire captured the general information or bio-data of the respondent, Section II captured information relating to the factors that affect out-of-pocket medical expenditure among out-patients in hospitals in Nairobi County. Part A of section II captured the level of income details of the respondents, part B captured the employment status of respondents, part C captured information relating to the cost of medical services, part D captured information relating to health insurance status and finally part E captured information relating to out-of-pocket medical spending of respondents.

3.5 Data Collection Procedures

The study will used self-administered questionnaires to collect data from the respondents. The main reason for use of the questionnaires was because it collects important information from the population since each item in it is developed to address the specific objectives and research questions of the study.

The questionnaires were distributed by the researcher to the 10 branches of public and private hospitals operating in Nairobi County. The respondents were randomly selected by the researcher when administering the questionnaires.

The questionnaires were accompanied by a brief introduction of the study and purpose of the study for the respondent.

According to Mugenda and Mugenda (2003), breaching confidentiality, is a matter of concern to all respondents. In view of this, the study withheld the names of the respondents and their respective view with utmost confidentiality. During the data collection emphasis was be given to the primary and secondary data.

3.6 Pilot Test

The questionnaires were pre-tested to establish their reliability and validity before conducting the study. A pilot study of 1% (4) of the 384 respondents was carried out at The Kenyatta National Hospital-Upper Hill Hospital road in their outpatient department. Pretesting instruments helped in ensuring that items in the instruments are stated clearly and have the same meaning to all respondents (Mugenda & Mugenda, 2003). The pretest assisted the study asses the clarity of the instrument and the ease of use of the instrument. This were be looked into by examining the time it takes to administer an instrument, identifying questions which confuse respondents and identifying sensitive and annoying questions.

The reason for choice of Kenyatta National Hospital is because the hospital has similar features as the other hospitals existing and operating in Nairobi County. The Hospital is also the biggest in the country and is a major referral hospital. The study subjected the pretest to the internal consistency technique of Kuder-Richardson (K-R) 20 Formula as shown below:

$$KR_{20} = (K) (S^2 - \sum s^2) / (S^2) (K-1)$$

Where:

KR_{20} = Reliability coefficient of internal consistency

K = Number of items used to measure the concept

S^2 = Variance of all scores

s^2 = Variance of individual items

To determine whether items correlate, the correlation coefficient was examined. A high coefficient for instance between 0.70 to 0.1 implies that items correlate strongly among themselves which implies that there is consistency among items in the measuring the concept of interest (Mugenda & Mugenda, 1999).

3.7 Data Collection Procedure

Questionnaires were used by the study to collect data from the desired target population who in this case are patients. The questionnaires were distributed to the different out-patients in the different outpatient clinics illustrated in Table 3.1 operating in Nairobi County. Questionnaires are useful for conducting research mainly because the respondent's response in this case may end up giving more insights into his feelings, background, hidden motivation, interest and finally decisions.

3.8 Data Analysis and Presentation

3.8.1 Data Analysis

Once the questionnaires have been administered, the mass raw data collected must be organized in a manner that facilitates the analysis. Therefore, the study did this by use of quantitative techniques which employs the use of both descriptive and inferential statistics. Descriptive statistics were used to meaningfully describe distributions of scores, measurements and statistics. Descriptive statistics such as Measures of central tendency (Mean, Mode and Median) and Measures of variability

(range, standard deviation, frequency distribution, histograms, frequency polygons, bar charts, percentages and relationships) were used in analyzing the data. Inferential statistics on the other hand were used to make inferences about the population based on results obtained from samples. In this study, Correlation tests and multiple regression tests were used as inferential statistic parameters.

Correlation is a technique used to measure the strength of the relationship between two variables. it provides a measure if how well a least square regression line fits the given set of data and points how closer the data fits the regression line. Correlation coefficient ranges between (+ or -) 0 and (+ or -) 1 and is represented by a symbol R (Francis, 1998). A correlation coefficient value of R=0 signifies that there is no correlation present whereas a value further away from the origin signifies a stronger correlation. The study used the product moment correlation test on all the regressors to test the association between the variables. The Level of Significance was set at 0.05 at 95% Confidence Level. The main advantage of using correlation test was that it is concerned in describing the strength of the relationship between two variables by measuring the degree of association of the data values.

The multiple regression model was estimated using ordinary least squares and it took the following form of equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + E_t$$

Where:

Y : Household out of Pocket Payment (Dependent Variable)

X_1 : Household Monthly Income (Independent Variable)

X_2 : Duration of Occupation (Independent Variable)

X_3 : Cost of Medical Services (Independent Variable)

X_4 : Health insurance status (Independent Variable)

E_t : Stochastic/Error term (Independent Variable)

The advantage of using this model is because it assisted to predict the value of household out of pocket medical spending given the value of household income, duration of occupation and household cost of medical services. According to Francis A (1998), the multiple regression model uses independent variables with each controlling for the others. Multiple regression models are also very flexible and allow one to use either numeric or categorical independent variables to allow for interactions between the variables.

The study coded the questionnaires and the data was entered into the computer using Statistical Package for Social Science (SPSS V-17) as well as STATA (12) statistical softwares. The statistical softwares aided the study in analyzing both descriptive and inferential statistics stated above.

3.8.2 Data Presentation

Data was presented using Tables, Charts and Graphs. Tables included frequency tables, contingency tables, pivot tables and regression result tables. Charts included Pie charts and Graphs included bar graphs and line graphs among others.

IV. DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter focused on data presentation, analysis and discussions of the survey results. The presentation of results from the survey will be based on the order of the study objectives and research questions.

4.1.1 Pilot Test Results

The study’s pilot test was carried out prior to the main survey and this was mainly aimed to determine the reliability and consistency of the survey instrument. The study obtained a Kuder Richardson reliability coefficient of 0.7 which clearly illustrated that the items to be surveyed had a high positive correlation among themselves.

4.2 General and Background Information

4.2.1 Response Rate

The study with the help of research assistants administered 115 questionnaires and all of them were filled and returned. The response rate in this case was 100% and was therefore considered for analysis (Mugenda & Mugenda, 2003). The survey covered a sample of public and private hospitals operating in Nairobi County.

4.2.2 Gender of Respondents

The survey results indicated that 59% of the respondents were male whereas 41% of the respondents were female. The total population of the respondents was 115. See Table 4.1.

Table 4. 1: Gender of Respondents

Gender	Frequency	Percent	Cumulative Percentage
Male	47	41%	41
Female	68	59%	100
Total	115	100%	

4.2.3 Name of Hospital

Results from the survey indicated that 26% of the respondents were from Kenyatta National Hospital and 17% were from Mbagathi district Hospital and Pumwani Maternity Hospital respectively. 10% of the respondents were from Aga Khan University Hospital whereas 6% & 7% of the respondents hailed from Nairobi West Hospital and M.P Shah Hospital respectively. A paltry 4% of the total respondents hailed from Guru Nanak Ramargarhia sikh Hospital, Mama Lucy Kibaki Hospital, Matter Hospital and Nairobi Hospital respectively. See Table 4.2 below.

Table 4. 2: Name of Hospitals

Hospital Name	Frequency	Percent	Cumulative Percent
Aga Khan University Hospital	12	10%	10%
Guru Nanak Ramargarhia Sikh Hospital	5	4%	15%
Kenyatta National Hospital	30	26%	41%
M.P Shah Hospital	8	7%	48%
Mama Lucy Kibaki Hospital	5	4%	52%
Mater Hospital	5	4%	57%
Mbagathi District Hospital	19	17%	73%
Nairobi Hospital	5	4%	77%
Nairobi West Hospital	7	6%	84%
Pumwani Maternity Hospital	19	17%	100%
Total	115	100%	

4.2.4 : Age Bracket

Majority of the respondents stated that they were between 30-35 years old. 29% of the toal respondents stated that they were between 25-30 years and above 40 years old respectively. a

paltry 3%, 2% and 1% of the respondent stated that they aged between 30-35 years, 30-36 years and 36-40 years respectively. See Table 4.3 below.

Table 4. 3: Age Bracket of Respondents

Age Bracket	Frequency	Percent	Cumulative Percentage
25-30	33	29%	29%
30-35	43	37%	66%
30-36	3	3%	69%
31-35	2	2%	70%

36-40	1	1%	71%
Above 40	33	29%	100%
Total	115	100%	

4.2.5: Level of Education of Respondents

The study also sought to collect the level of education of respondents. The results indicated that 44% of the respondents had Bachelors Degree followed by 22% who had Diploma Certificates. 20% of the respondents had KCSE Certificate

meaning they were form four leavers. A paltry 45 of the respondents had Higher diploma Certificate and Masters Degree respectively. See Table 4.4

Table 4. 4: Level of Education of Respondents

Level of Education of Respondents	Frequency	Percentage %
Higher Diploma	5	4%
CPA K	5	4%
Masters Degree	7	6%
KCSE Certificate	23	20%
Diploma	25	22%
Bachelors Degree	51	44%
Total	115	100%

4.2.6: Sole Financial Provider

The study established that 35% of the Male and Female respondents stated that they were no the sole financial providers In their households. The study also established that 47% and 53% of the Male and Female respondents respectively were the sole financial providers on their households. See Table 4.5.

Table 4. 5: Sole Financial Provider of the Household

Gender	Are you the Sole Financial Provider	
	No	Yes
Male	35%	47%
Female	65%	53%
Total	100%	100%

4.3: Descriptive Statistics

4.3.1: Income Level of Respondents

The study collected the monthly income earned by the 115 respondents. It was established from the descriptive statistics results that the maximum income earned by the respondents was 560,000 Ksh whereas the minimum amount earned by the respondents was 7,000 Ksh. the average monthly income earned by the respondents was 84,591 Ksh which had a standard deviation of 91,115 Ksh. See Table 4.6 below.

Table 4. 6: Level of Income of Respondents

N	Minimum Income	Maximum Income	Mean	Standard Deviation
115	7,000	560,000	84,591	91,115

4.3.2: Employment Status

4.3.2.1 : Employment Status of Respondents

The study sought to establish the employment status of the different respondents. Approximately 69% of the respondents were identified to be employed on salary whereas 30% of the respondents were identified to be self employed. A paltry 2% of the respondents were identified to be Semi Employed casual workers. See Figure 4.1 below.

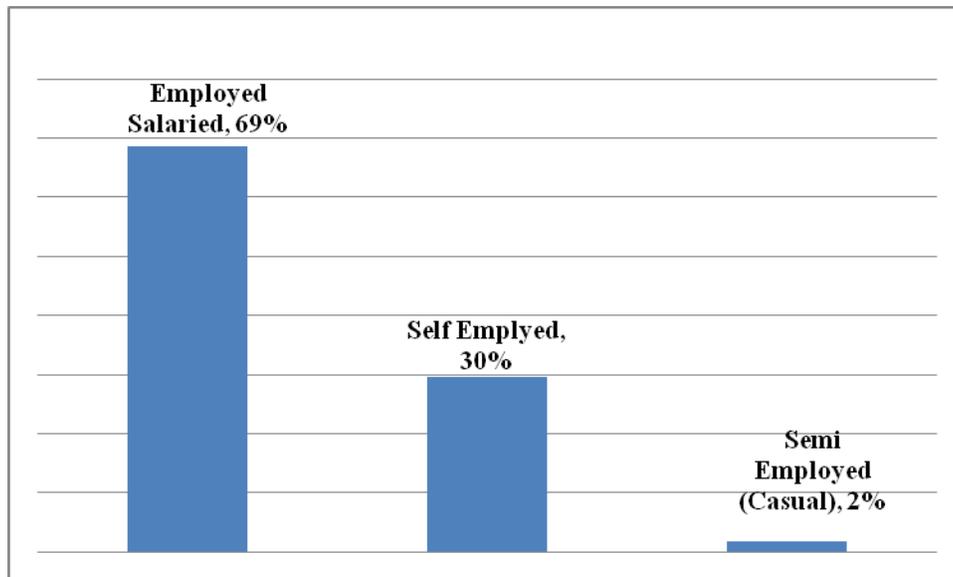


Figure 4. 1: Employment Status of Respondents

4.3.2.2: Cross Tabulation of Employment Status and Duration in Current Occupation

The cross tabulation of employment status against the duration in current occupation of respondents revealed that 265 of the respondents have been in their current occupations for 3 years whereas 19%, 18%, 13% and 10% of the respondents have been in their current occupations for 4, 2, 5, and 1 year respectively. See Table 4.7 below.

Table 4. 7: Cross Tabulation of Employment Status against Duration of Occupation

Employment Status	Duration In Current Occupation											Total
	1	2	3	4	5	6	7	8	9	10	12	
Employed Salaried	6%	15%	15%	12%	11%	5%	2%	1%	1%	1%	0%	69%
Self Employed	3%	3%	11%	7%	2%	0%	2%	0%	0%	1%	1%	30%
Semi Employed (Casual)	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%
Total	10%	18%	26%	19%	13%	5%	3%	1%	1%	2%	1%	100%

4.3.3: Cost of Medical Services

4.3.3.1 Number of Chronically Ill Members per Household

The study made an attempt to establish the current number of chronically ill members from the different households. 60% of the respondents indicated that none of their members are chronically ill whereas 40% of the respondents indicated that at least 1 member from their household was chronically ill. See Table 4.8 below.

Table 4. 8: Number of Chronically Ill Members per Household

No of Chronically Ill Members in Household	Frequency	Percentage	Cumulative Percentage
0	69	60%	60%
1	46	40%	100%
Total	115	100%	

4.3.3.2: No of Children under Age 5 per Household

The study identified that almost 44% of the households had 1 child under the age of 5 years old whereas 28% had 2 children under age 5. A paltry 4% of the households had 3 children under age 5. 24% of the respondents stated that their households had no child under the age of 5 years old. See Table 4.9 below.

Table 4. 9: No of Children under Age 5 in the Household

No of Children under Age 5 in the House Hold	Frequency	Percentage %
3 Children	5	4%
None	28	24%
2 Children	32	28%
1 Child	51	44%
Total	115	100%

4.3.3.4 Cost of Monthly Associated Sicknesses

The study established that the maximum cost spent on average on associated sicknesses was 87,000 Ksh whereas the some respondents stated that they incur zero costs on the same. The mean of the stated costs by the 115 respondents was 9,579 Ksh with a standard deviation of 14,878. See Table 4.10 below.

Table 4. 10: Cost of Monthly Associated Sicknesses

N	Minimum	Maximum	Mean	Standard Deviation
115	0	87,000	9,579	14,878

4.3.4: Health Insurance Status

4.3.4.1: Respondents Health Insurance Status

It was established that 70% of the respondents had Health Insurance Cover whereas 30% did not have any. See Figure 4.2 Respondents Health Insurance Cover

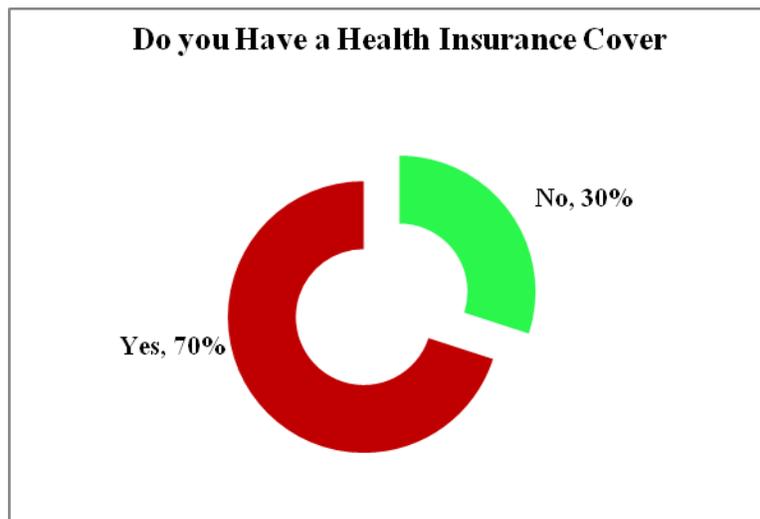


Figure 4. 2: Respondents Health Insurance Cover

4.3.4.2 : Respondents Health Insurance Compnay

The study carried out a cross tabulation of Health Insurance Companies against Health Insurance Cover. It was established that majority of the respondents belonged to NHIF whereas 7% of the respondents belonged to AON and Liberty Insurance Companies. 6% and 4% of the respondents belonged to Resolutin Insurance and KenGen Insuraance respectively whereas 3% and 2% of the respondents belonged to Jubilee Insurances, Madison Insurance, UAP insurance and Linda Jamii, respectively. 35% of the respondents held the Co Payment and Exclusive Provider Plan whereas 30% of the respondents as previously stated held no insurance cover plan. See Table 4.11 below.

Table 4. 11: Cross Tabulation of Health Insurance Company With Health Insurance Cover

Health Insurance Company	Health Insurance Cover			Total
	Co Payment	Exclusive Provider Plan	None	
AON	7%	0%	0%	7%
Jubilee	3%	0%	0%	3%
KenGen	4%	0%	0%	4%
Liberty	7%	0%	0%	7%
Linda Jamii	2%	0%	0%	2%
Madison	3%	0%	0%	3%
NHIF	0%	35%	0%	35%
Resolution	6%	0%	0%	6%
UAP	3%	0%	0%	3%
None	0%	0%	30%	30%
Total	35%	35%	30%	100%

4.3.4.3: Household Average Health Insurance Cost

The maximum health insurance cost charged to members was 45,000Ksh. Other respondents stated that they currently incur zero costs on health insurance because they lack any health insurance cover. The mean household health insurance cost was 6,385 which had a standard deviation of 10,283. See Table 4.12 below.

Table 4. 12: Household Average Health Insurance Cost

N	Minimum	Maximum	Mean	Standard Deviation
115	0	45,000	6,385	10,283

4.3.5: Out of Pocket Medical Expenditure

4.3.5.1: Payment Option for Medical Services

Majority of the respondents (34%) stated that they often rely on nthe Governrmtn Health Insurance of NHIF as their most preferred payment option for medical services cost. 33% of the respondents stated that they often use cash to pay for medical services and privat insurance respectively. See Figure 4.3 below.

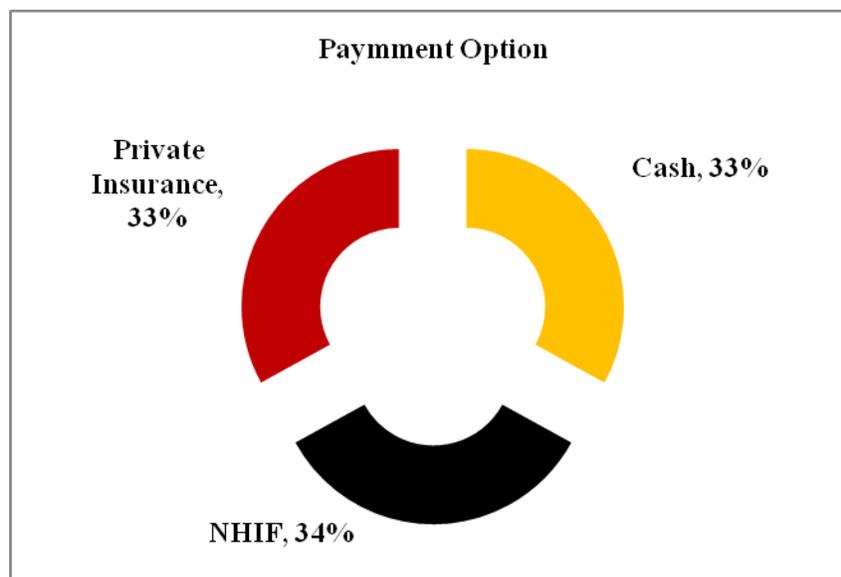


Figure 4. 3: Payment Option for Medical Services

4.3.5.2: Monthly Out of Pocket Health Expenditure

The study found out that the maximum out of pocket health expenditures cost incurred by the 115 respondents was 35,000Ksh which had a mean of 6,997 Ksh and with a standard deviation of 8,572. See Table 4.13.

Table 4. 13: Monthly Out of Pocket Health Expenditure

N	Minimum	Maximum	Mean	Standard Deviation
115	0	35,000	6,997	8,572

4.3.5.3: Frequency of Monthly Visits to Health Facilities

Finally, the study established that most of the respondents (60%) visit the health facilities once in a month whereas 22%, 17% and 1% of the respondents visit the health facilities 2 times, 4 times and 4 times respectively on a monthly basis. See Table 4.14 below.

Table 4. 14: Frequency of Monthly Visits to Health Facilities

Monthly Visits to Health Facilities	Frequency	Percentage	Cumulative Percentage
1	70	60%	60%
2	25	22%	82%
3	19	17%	99%
4	1	1%	100%
Total	115	100%	

4.4 Inferential Statistics

4.4.1 Correlation Analysis

The study carried out the Pearson Product Moment Correlation Coefficient on the dependent variable and independent variables so as to measure the strength of the direction of the linear relationship between the variables. The results presented in the correlation matrix below indicate that most of the independent variables had no significant statistical correlation. The results however indicated that there existed a strong positive relationship between household income and cost of household medical services (R=0.727) and a weak significant positive correlation between cost of medical services and health insurance status (R=-0.331).

Table 4. 15: Correlation Matrix

Correlation Analysis Matrix		Household Income	Duration in Current Occupation	Cost of Household Medical Services	Health Insurance Status
Household Income	Pearson Correlation	1.000	0.094	0.727**	0.170
	Sig. (2-tailed)	0.000	0.319	0.000	0.069
	N	115	115	115	115
Duration in Current Occupation	Pearson Correlation	0.094	1.000	0.036	-0.036
	Sig. (2-tailed)	0.319	0.000	0.701	0.699
	N	115	115	115	115
Cost of Household Medical Services	Pearson Correlation	0.727**	0.036	1.000	0.331**
	Sig. (2-tailed)	0.000	0.701	0.000	0.000
	N	115	115	115	115
Health Insurance Status	Pearson Correlation	0.170	-0.036	0.331**	1.000
	Sig. (2-tailed)	0.069	0.699	0.000	0.000
	N	115	115	115	115

4.4.2 Regression Analysis

The study carried out regression tests so as to describe the relationship between the dependent variable (Out of Pocket Medical Payment) and the independent variables (Household Income, Duration in Current Occupation and Cost of Household Medical Services). Table 4.12 below illustrates the model summary results output generated from SPSS V.20. The correlation coefficient R=57.1 indicates that the variables on average are positively moderately correlated. The (R Squared) coefficient of determination

value of $R^2=0.335$ indicates that 33.5% of the variation in out of pocket medical payments and was explained by the variation in household income, duration in current occupation and cost of household medical services. The adjusted coefficient of determination (Adj R Squared) was less than the un-adjusted Coefficient of determination as it should always be (Adj R Squared=0.311 < R Squared = 0.335). This still implied that 33.5% of the variation in variation in out of pocket medical payments and was explained by the variation in household income, duration in current occupation cost of household medical services and insurance status. See Table 4.16.

Table 4. 16: SPSS Regression Model Summary Results

Model	R	R-Squared	Adjusted R Squared	Standard Error of Estimate
1	0.579	0.335	0.311	7,115.99

SPSS V.20 when generating regression results also generates Analysis of Variance Results (ANOVA). The ANOVA results in Table 4.17 below shows how well the sample regression model fits. The significance value $P = 0.00$ of the regression model was less than the level of significance of 0.01 at 99% confidence level. This therefore showed that the regression model was statistically significant and predicts out of pocket medical payments.

Table 4. 17: Analysis of Variance Regression Test Results

	Sum of Squares	Degrees of Freedom	Mean Square	F Statistics	Probability Significance Value
Regression	2,808,290,321.959	114	702072580.490	13.865	0.000
Residual	5,570,118,895.432		50637444.504		
Total	8,378,409,217.391				

The linear regression model results -with out of pocket medical payments as the dependent variable and household income, duration in current occupation and cost of household medical services as independent variables was estimated. The study used the unstandardized beta coefficients because the raw units of the dependent and independent variables are familiar as commonly used units of measurements.

On average, holding duration in current occupation and cost of household medical services constant, an increase in household income increases households out of pocket medical payments by (0.025 units) 0.025 Ksh.

On average, holding household income and cost of household medical services constant, an if employees stay for a long period of time in current occupation, the out of pocket medical payments reduce by 705.574 Ksh.

On average, holding house hold income and duration in current occupation constant, an increase in the cost of household medical services reduces the cost of out of pocket medical payments by 0.211 Ksh. See Table 4.14 below.

On average, insurance status holding all other factors constant decreases the cost of out of pocket medical payments by 8,099.973 Ksh. See Table 4.14 in the next page.

Table 4. 18: Regression Coefficient Results

Regression Model	Un standardized Coefficients		Standardized Coefficients	t Statistics	Probability Significance Value
	B	Standard Error	Beta		
Constant	15,199.975	1,636.67		8.440	.000
Household Income	.025	.011	.264	2.306	.023
Duration in Current Occupation	-705.574	333.866	-.165	-2.113	.037
Cost of Household Medical Services	-.211	.069	-.366	-3.075	.003
Health insurance status	-8099.973	1551.812	-.433	-5.220	.000

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter will present the summary of findings, conclusion and recommendations and will give the areas for further research based on the results from chapter four. It is important to note that the findings in the study followed a chronological sequence based on the objectives of the study.

5.2 Summary of the Findings

The number of the respondents in the study was 115 which is quite significant and they were surveyed from the 10 public and private hospitals located in Nairobi County. The study collected information from the respondents and mainly focused on different age brackets as well as different income groups so as to ensure an adequately large amount of information. A regression model estimated based on the results from the survey.

5.2.1 Income Levels of Individual/ Household head

One the first specific objective, the study investigated the association between household income levels and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County. The results indicated that for every Kshs increase in household monthly income, out of pocket medical expenditure rises by Kshs 0.25 on average. This indicated that household monthly income had a positive association on out of pocket medical expenditure.

5.2.2 Employment Status of Individual/ Household Head

One the second specific objective, the study examined the association between employment status and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County. The results indicated that for every incremental month of occupation duration, out-of-pocket medical expenditure was reported to decrease by Ksh705.574 on average. This indicated that employment status and out of pocket medical expenditure had negative associations.

5.2.3 Cost of Health Services

One the third specific objective, the study established the relationship between cost of medical services and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County. The results indicated that for every Kshs increase in household costs of medical services, out- of- pocket health expenditure reduces by Kshs 0.211 on average. This indicated that the cost of medical services and household out of pocket expenditure had a negative relationship.

5.2.4 Insurance Status of Individuals

One the fourth and final specific objective, the study investigated the association between health Insurance status and household out-of- pocket medical expenditures among out patients in Nairobi County. The results indicated that the presence of health insurance reduces out-of pocket health expenditure by Kshs 8,099.973 on average. This indicated that the cost of health insurance status and household out of pocket expenditure had a negative relationship.

5.3 Conclusion

The implications of these findings are as follows;

5.3.1 Income Levels of Individual/ Household head

With regards to the association between household income levels and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County. There was a tendency

for higher income earners to spend more of their income on out-of-pocket medical spending. This could be attributed to their preferences for the more expensive private sector medical services and their tendency towards preventive medical services such as medical screening.

5.3.2 Employment Status of Individual/ Household Head

With regards to the association between employment status and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County, the duration of employment causes a marginal reduction in monthly out-of-pocket spending. This could be attributed to the fact that firms tend to register their employees in health insurance schemes and or have group health insurance covers.

5.3.3 Cost of Health Services

With regards to the relationship between cost of medical services and household out-of-Pocket medical expenditures among out patients in hospitals in Nairobi County, the cost of medical services relates very slightly negatively to out-of-pocket medical expenditure perhaps because more costly services are demanded less but also because medical services are not sought for the larger part by consumer choice but by absolute necessity.

5.3.4 Insurance Status of Individuals

With regards to the association between health Insurance status and household out-of- pocket medical expenditures among out patients in Nairobi county. Health insurance status had a very large and significant impact on out-of-pocket health expenditure due to the fact that 3rd party payers such as health insurance shield the consumer from the monetary effects of ill health.

With regards to the general objective i.e. the factors that affect Out-of-Pocket medical expenditure among out patients in hospitals in Nairobi County ; - Out-of-pocket health expenditure increases with increased household income but declines with increased;- cost of medical services, duration of employment, cost of medical services and the presence of health insurance/subscription to health insurance. This is in line with theoretical proposition that more costly health service mixes are demanded by higher income earners for instance; private health services, screening services, preventive health services etcetera.

5.4 Recommendation

The following are the recommendation of the study based on the objectives and the research questions:

5.4.1 Income Levels of Individual/ Household head

With regards to household income, the study recommends the subsidization of healthcare services to low income households by the National and County Government.

5.4.2 Employment Status of Individual/ Household Head

With regards to employment status the study recommends the introduction of low budget health insurance schemes for employees with short employment duration, informal workers, and the newly employed.

5.4.3 Cost of Health Services

With regards to the relationship between cost of medical services, the study recommends the introduction of price ceilings for healthcare medical services.

5.4.4 Insurance Status of Individuals

With regards to health insurance the study recommends policy actions to compel employers to provide insurance cover to short term contract workers.

5.5 Suggestions for Further Research

The limitations of this study are its general focus on out-of-pocket health expenditure across all income categories. The study proposes that future research should be carried out in the following areas:

1. To investigate the relationship between out of pocket medical expenditure and income level of patients across hospitals in Nairobi County
2. To determine the challenges encountered by out of pocket medical patients across hospitals in Nairobi County.

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