Effect of National Hospital Insurance Fund Outpatient Scheme On Financial Sustainability of Public Hospitals in Kenya a Case of Sub-County Hospitals in Nakuru County, Kenya

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Abstract: The study examined the effect of utilization levels of National Hospital Insurance Fund outpatient services on financial sustainability of Sub-County health facilities in Nakuru County, Kenya. The financial intermediation theory and the financial health model guided the study. A descriptive survey design was adopted. The management employees working in the public health sector in Kenya were targeted. The accessible population constituted the 183 management staff working with the 6 Sub-County hospitals in Nakuru County. Stratified random sampling technique was adopted to obtain 81 respondents from the study population. The study used a structured questionnaire to collect data and a secondary data collection sheet. The questionnaire was pilot tested to determine both its validity and reliability. The collected data were subjected to necessary analysis with the facilitation of the Statistical Package for Social Sciences Version 24 programme. Data analysis encapsulated both descriptive and inferential statistics. The results of the analysis were presented in form of tables.It was found that increasing the utilization levels of the NHIF had little likelihood to increase financial sustainability of Sub-County hospitals. It was found that the NHIF outpatient scheme, particularly the scheme's utilization levels could explain 25.0% of the variation of financial sustainability of the aforementioned hospitals. It was concluded that utilization levels of NHIF outpatient scheme have little effect on financial sustainability of the surveyed health facilities. The study recommended that the hospitals should ensure that the utilization levels of the scheme is proportional to the capitated amount. It is also recommendable to both national and devolved governments for increased budgetary allocation to all the public health facilities in Kenya.

Key words: Financial sustainability, National Hospital Insurance Fund, outpatient scheme, public hospitals, Sub-County hospitals, utilization levels

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I. Introduction

Health insurance is fundamentally important in improving access to healthcare. According to Cohen and Martinez (2014), public health plan coverage, which is essentially funded by the government, encapsulates children's health insurance programme, state-sponsored health plans, and military plans among other health plans sponsored by the government. It is further noted that insurance coverage increases with increase in vulnerability of the people. The children and the aged (persons aged more than 65 years) have a greater insurance coverage as opposed to persons between ages 18 and 65 [1].

The challenges of financial sustainability of the health care services providers are prevalent across the world. Various countries have different expenditures on the public health. According to the OECD Health Statistics [2], the average of total health spending in relation to the Gross Domestic Product (GDP) was 9.3% in the year 2012. The statistics further indicated that the United States led the OECD countries by spending 16.9% of its GDP in 2012.

In the People's Republic of China, health insurance became imminent in 1950's where it was organized around rural agricultural communities and/or around urban places of employment [3]. The rural people were covered under cooperative medical insurance schemes that were managed by agricultural communes. On the other hand, the Labour Insurance System (LIS) incepted in 1951 was the umbrella that provided health insurance schemes to employees working with State-Owned Enterprises (SOEs). The three medical insurance schemes in China, namely, New Rural Cooperative Medical Scheme (NCMS), Urban Employees Basic Medical Insurance (UE-BMI), AND Urban Residents Basic Medical Insurance (UR-BMI) function differently and their financing also vary. It is important to note that respective county level governments determine the design of NCMS [4]. In the country, it is postulated that there exists a formula-based model that is employed in

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reimbursements for outpatient services. At county levels, outpatient services could be reimbursed from a pool of funds in relation to the aforesaid formula by ordinarily with no deductibles [3].

Within the context of Africa, there has been a general trend in health care financing that started with provision of free access to healthcare, cost sharing phase and finally the introduction of government run health insurance scheme [5]. The immediate post-independence era had the most governments trying to offer free health care. However, an increasing population as well as costs of healthcare provision led to the cost sharing platforms in which the citizens and government shared the costs of medical provision. This has led to the development of health care insurance funds which can either be private insurance or government funded insurance [6].

Amongst the African countries that have enacted a government run health insurance fund include Nigeria, Ghana, Rwanda, and Tanzania amongst others [7]. Nigeria established the National Health Insurance Services (NHIS) in 1999 while Tanzania have the National Health Insurance Fund (NHIF) established in 1999.

It is reported that in spite of the fact access to quality healthcare being enshrined in the Constitution of Kenya, millions of citizens are unable to afford health services due to the fees charged by public and private health facilities being out of their reach. According to the World Bank Report on Improving Healthcare for Kenya's Poor, though public health insurance was incepted about half a century (1966) ago, about 80% of the populace which is equivalent to more than 35 million Kenyans lack health insurance cover [8].The dire need and expensive nature of healthcare in Kenya occasion to about one million citizens to fall below the poverty line every year. The foregoing situation underscores the necessity and importance of the insurance coverage subsidized by the government. One of the major initiatives to this effect, is the Health Insurance Subsidy Programme (HISP) launched by the Kenyan government in early 2014. The initiative extends financial risk protection to the poorest in the society by availing to them a health insurance subsidy covering both inpatient and outpatient care in public and private health outlets in the country [8].

Kenya established the National Hospital Insurance Fund (NHIF) in 1966 through an Act of Parliament to provide health care to salaried public and private sector employees that were earning over a thousand shillings. There have been several overhauls of the laws governing NHIF over the years [9]. In this context, the amounts payable have changed over the years from Ksh 5 for civil servants in 1966, a graduated scale ranging from Ksh 30 to Ksh 320 in 1990, and in the recent past there have been diverse changes in the amounts payable to NHIF. For the salaried people, this range from Ksh 150 for low income earners to Ksh 1,700 for high income earners. The self-employed persons pay Ksh 500 per month [10].

To date, the NHIF is reputed for being the most widely available medical cover in Kenya, with close to 500 accredited health facilities across the country. The government of Kenya has for decades been extending health insurance cover through the NHIF specifically for inpatient benefactors. It is stated that a pilot outpatient service programme that allowed NHIF members to access outpatient insurance cover in selected hospitals came to fruition in 2015 [11]. Therefore, insurance coverage or outpatient services is one of the major strides that the Fund has witnessed in the recent past. The present study particularly investigated how the outpatient scheme offered by the NHIF affect financial sustainability of Sub-County health facilities in Nakuru County.

II. Statement of the Problem

The NHIF outpatient scheme was incepted with the object of addressing financial difficulties faced by the member of the scheme when seeking healthcare without the need to be admitted to health facilities. This was in the wake of increased outpatient visits to public hospitals. It is indicated that the average number of visits to an outpatient health provider, that is, utilization rate, per capita per year increased by 35% from 2007 to 2013. In addition, statistics indicate that the annual per capita outpatient spending rose to KSh 1,254 in 2013 [12]. The contractual agreement between the Fund and the health facilities mandated to offer outpatient services has hitherto been faced by a couple of financial hurdles that have rendered provision of quality healthcare by these health outlets challenging. The delayed reimbursement by the NHIF of the costs incurred by these health facilities in the provision of outpatient services is a financial debacle that these entities have been obliged to live with. This is albeit the fact that these health utilities are expected to provide healthcare, the foregoing situation notwithstanding. The capitation of the Fund against the requirement of these health facilities to offer healthcare limitlessly is likely to occasion financial problems in the provision of the healthcare.

These health facilities are the ones bound to be affected by the aforestated financial problems. The failure by certain NHIF-listed facilities to extend services to NHIF members due to delayed reimbursements can attest to the financial challenges facing these facilities. The reason this issue is a problem is founded on the fact that, being public entities, they are expected to provide quality health facilities regardless of their financial capacity or incapacity to do so. The hitherto empirical evidence as manifested in studies conducted locallydid not specifically examine how outpatient scheme offered by the NHIF affects financial sustainability of public health facilities[7, 11, 13]. To this end, therefore, this study sought to link the aforestated scheme to financial sustainability of Sub-County health facilities in Nakuru County.

1. Study Objective

To determine the effect of utilization levels of NHIF outpatient services on financial sustainability of Sub-County hospitals in Nakuru County

2. Research Hypothesis

H_0: There is no significant effect of utilization levels of NHIF outpatient services on financial sustainability of Sub-County hospitals in Nakuru County

H_A: There is significant effect of utilization levels of NHIF outpatient services on financial sustainability of Sub-County hospitals in Nakuru County

III. Literature Review

This section reviews theories, models and past empirical studies in relation to health insurance and financial sustainability in the health sector. The chapter also outlines the conceptual framework that expounds study constructs and their hypothesized relationship.

5.1 Theoretical Framework

Theoretical framework presents a review of theories and/or models in respect of health insurance and financial sustainability. The financial intermediation theory and the financial health model are reviewed and discussed in the context of NHIF outpatient scheme and financial sustainability in Sub-County hospitals.

5.1.1 The financial intermediation theory

The theory of financial intermediation was proposed by Gurley and Shaw in 1960 [14]. The theory states that resource allocation is based on perfect and complete markets where friction occasioned by transaction costs and asymmetric information is important in understanding intermediation. It is postulated that in spite of the reduction in transaction costs and asymmetric information, intermediation has increased [15]. It is stated that trading costs enables intermediaries to be more easily diversified than individuals. Various theorists have examined the friction that emanates from investors' information sets. They have outlined the role of asymmetric information as an optional rationalization in respect of the importance of intermediaries.

It is stated that an intermediary may decide to indicate their informed status by investing their wealth in assets where they have much information about [16]. This implies that intermediaries are able to invest in a policy where they can get the maximum returns due to favourable information asymmetry. In the same vein, it is asserted that intermediaries are able to overcome the problems occasioned by information asymmetry by assuming the role of delegated monitors [17]. It is also noted that risk management plays a crucial role in the activities of the intermediaries. Risk management as explained by the theory of financial intermediation is most effective when making firm-level decision.

The financial intermediation theory underscores the importance of firms to undertake risk management. It is paramount for firms to consider transaction costs and agency costs of ensuring managers transact appropriately. The theory of financial intermediation is applicable in the case of institutions which take deposits or issue insurance policies and channel funds to entities [15]. This is in support of earlier assertion that insurance companies have historically played a central role in intermediation [18]. It is stated that insurance firms, after realizing that their actuarial function played a minor part of their asset management capabilities, they resorted to more innovative measures and broadened both their products and services. The foregoing has led to the inception of outpatient services as offered by the NHIF.

5.1.2 Financial health model

The financial health model was developed by Abraham in 2003 [19]. The model determines the financial health of a Non-profit Organization (NPO) by putting into perspective various operational aspects over time, and then addressing the said criteria in respect of financial accountability. The model is applicable to a specific organization at a time. The model provides analytical means of assessing the financial sustainability of an organization. It does this by recommending particular and pertinent measures which can be employed to improve the entity's financial health.

The financial health model was developed in the wake of the increasing scope and size of the nonprofit sector, a factor that necessitated increased financial accountability [20, 21]. It is further postulated that NPOs are established with the aim of accomplishing altruistic as opposed to financial goals. The foregoing occasions the accountability systems of NPOs being developed around exigency basis, that is, when the situation demands for such accountability. Regardless of the foregoing, the stakeholders who are mainly the public are entitled to financial accountability by the concerned NPOs.

The financial health model puts into perspective four tenets. These include equity balances, revenue concentration, administrative costs, and operating margins [19]. In respect of NPOs, operating equity is obtained from its operating income only. This equity can be held in various forms which include liquid assets like cash,

or no-liquid assets such as infrastructure. The equity balances are important to the financial health of NPOs. Revenue concentration is characterized by both diversity and distribution. It is postulated that financial sustainability is enhanced by diversification of revenue sources since it is highly improbable that all sources are prone to the same economic shocks [22]. Moreover, it is asserted that equal distribution of revenue from various sources is likely to improve the financial sustainability of an NPO.

In respect of administrative costs, it is paramount to reduce expenditure and/or increase the revenues in order to improve the financial position of an entity [23]. In the context of NPOs, it is rational to minimize indirect expenditure such as administrative costs as opposed to direct costs that are involved in the provision of services by the NPO. It is further averred that operating results impact on the financial sustainability of NPOs. It is noted that when an entity has a low or negative operating margin, it is bound to have little or no cash surplus which can be drawn before being obliged to cut provision of services. Conversely, an NPO with a high or positive operating margin is likely to be financially sustainable.

It is stated that sustainable finance is a driving force for carrying out an analysis that explicitly integrates an organization's sustainability policy, employee relations, community relations, board diversity, exposure to regulatory risks, among other important facets [24]. The financial health model provides the framework that can be employed to investigate the financial sustainability of non-profit making organizations [19]. This is realized by factoring in the organization's financial position over time. According to this model, financial sustainability and financial health are intertwined particularly in respect of NPOs. Given that the financial health model is preferable in explaining the financial health and sustainability of NPOs, it is thus applicable in the context of Sub-County hospitals which are apt examples of NPOs since profit making does not constitute their interests and objectives.

2.2 Empirical Review

Past empirical studies relative to health insurance and financial sustainability particularly in the health sector are reviewed. Specifically, the reviewed studies touch on utilization levels of the insurance cover and financial sustainability.

5.2.1 NHIF cover utilization and financial sustainability

In Kenya, a study analyzed the factors affecting the uptake of national health insurance in the informal sector, a case of Murang'a County [25]. The study employed a descriptive research design and stratified and systematic sampling techniques were used to draw a sample of 354 respondents. The study revealed that more females had enrolled and used health insurance as compared to their male counterparts. Further, the study revealed that education level and level of income had a significant influence on enrolment and usage decision. In addition, the study revealed that there was low awareness of health insurance registration and payment process, resulting in low enrollment and usage of the health insurance. The study recommended that the number of health facilities should be increased so as to increase the uptake and utilization of health insurance.

Another study investigated the determinants of uptake of NHIF in the informal sector in Nairobi County [26]. The results of the study indicated that only 32% of the total respondents were enrollee of the health scheme. In addition, the study revealed that 33.5% of the respondents were not aware of the medical conditions covered by NHIF scheme. The study revealed that the level of income has an impact on the uptake of NHIF scheme. This was attributed to lack of money to pay the monthly premiums and low confidence in the effectiveness of the scheme. Based on the findings, the study recommended that the government should create awareness about the NHIF scheme so as to increase uptake and usage of the scheme.

A study conducted in Ghana evaluated the impact of capitation on cost and utilization of health services [27]. The study adopted convenience sampling technique to draw a sample from 43 administrative districts. The study revealed that there has been a decrease in utilization of health care services in the outpatient department as a result of the capitation policy. Moreover, the study revealed that enrollees of the insurance medical scheme accessed less health services per member. Furthermore, the study revealed that inpatient utilization of the health service decreased since the primary health provider have become more efficient and subscribers are able to receive treatment early before the disease progresses.

Another study conducted in the same country [28] assessed the relationship between the utilization of healthcare services and renewal of health insurance membership in Ghana. The study revealed that majority of the subscribers who utilized the healthcare services renewed their insurance membership. However, the study indicated that those who did not utilize healthcare services did not renew their membership and instead opted out. Moreover, the study revealed that those with regular visits to the healthcare providers registered higher renewal rates of the insurance cover. The study noted that health insurance schemes have reduced out-of – pocket expenditures and have enhanced the utilization of both inpatient and outpatients services.

In India, an empirical study evaluated the influence of publicly financed health insurance schemes on healthcare utilization [29]. The study revealed that there has been an increase in the utilization of health care services after the introduction of the health schemes across the country, indicating that more people are making

good use of the schemes. However, the study revealed that there is no significant reduction of out-of-pocket expenditure as a result of utilization of medical insurance schemes. In addition, the study revealed that there is no equity in enrolment and utilization of the medical schemes since there is poor identification of those who need the services more.

A study conducted in Germany investigated the impact of health insurance on utilization of medical care in Germany [30]. Secondary data obtained from the German Socio Economic Panel for the period from 2000 to 2006 was used in the study. The results of the study indicated that private insurance has a negative impact on utilization of healthcare since there are minimal visits to medical care providers. However, the study established that public insurance has a positive effect on health, indicating that most subscribers of private insurance are satisfied with the services they receive from medical care providers.

5.2.2 Financial sustainability in the health sector

In Kenya, a study examined health care financing strategies used by faith-based hospitals and their influence in financial sustainability [7]. The study employed both purposive and stratified sampling techniques and data was collected using questionnaires. The study revealed that insurance was a source of revenue for the hospitals, despite the fact that the utilization of that avenue is low. Moreover, the study indicated that donor funding was also a source of income used to ensure financial sustainability of the hospitals. The study established that the highest proportion of revenues for the hospitals came from the fee charged for services offered to patients. The study recommended installation of appropriate financial management systems to facilitate financial sustainability of the hospitals.

Another study evaluated the financial sustainability of contributory and non-contributory financing techniques in Kenya [31]. The results of the study established that in the case of contributory technique, social health insurance scheme is financially sustainable in the first 5 years of implementation but sustainability drops with time afterwards. However, the study revealed that in the case of non-contributory technique, sustainability of the social health insurance is possible both in the long and short term. The study recommended that the government need to come up with creative strategies to be used in financing the health care sector.

In Nigeria, an empirical study evaluated the challenges of implementing a sustainable health care delivery [32]. The study used secondary data obtained from scientific databases. The study noted that a sustainable health care system can only be achieved if effective health plans are implemented based on the national health policy. Furthermore, the study revealed that availability of financial resources that are released on time can increase health care performance and sustainability. According to the study, poor utilization of opportunities in the past has been a major barrier towards attaining a sustainable health care system. The study recommended the use of sustainable care plans, accountability and commitment by the government to ensure sustainability of the health care sector.

A study conducted in Ghana [33] analyzed the financial sustainability of the Ghanaian health insurance scheme. The study obtained data through interviews with the schemes officials. The study revealed that sustainability of the scheme is at risk. This was attributed to the government lack of funds to pay the health service providers. Moreover, the study revealed that as a result of the aforementioned, the service providers have re-introduced out-of-pocket payment system. The study indicated that other factors affecting the financial sustainability of the health scheme include corruption and delay in processing and releasing of insurance cards. Based on these findings, the study recommended that the government should source for funds from other avenues to ensure financial sustainability of the scheme.

A global study assessed health care financing and sustainability of the health systems in the developed countries [34]. The study indicated that depending on employer-employee contribution is ineffective since their contribution is not enough to sustain health systems. In addition, the study noted that due to increased unemployment rates, the health care system has faced a decline in budget allocation leading to low financing of the systems. According to the study, health care system should be financed through taxation to ensure their financial sustainability, patient satisfaction and improved hospital performance even during hard economic times.

A study conducted in Czech Republicassessed financial sustainability in health systems [35]. The study noted that financial sustainability is constricted by the increase of healthcare demand which in turn increases healthcare spending. The study further revealed that government inability to commit more financial resources to the health system is also another barrier to achieving financial sustainability in the healthcare sector. The study recommends increased investment in the healthcare sector to ensure that chronic diseases are prevented early enough to reduce future spending in health care thus enhancing financial sustainability.

IV. Conceptual Framework

A conceptual framework is defined as an illustration of study variables and their perceived relationship diagrammatically or in narrative or both. The framework is depicted in Figure 1.

The conceptual framework shown in Figure 1 presents the independent and dependent variables. Utilization levels constitute the independent variable while financial sustainability is the dependent variable. Each of the stated variables is characterized by pertinent measurable indicators. It was perceived that the NHIF utilization levels characterize the NHIF outpatient scheme. It was further believed that the NHIF outpatient scheme affects the financial sustainability of Sub-County hospitals in Nakuru County.

V. Methodology

Research methodology which is expounded in this section describes and explains the procedure that was followed to conduct a study and arriving at findings that address the statement of the problem and study objectives. In this chapter, the research design, target population, sampling procedure, and research instrument in relation to the present study are explained. These are followed by determination of both the validity and reliability of the research instrument, data collection procedure, and the methods employed to process and analyze the collected data. Lastly, the chapter states how the results of the analysis were presented.

7.1 Research Design

A research design is defined as the roadmap that guides how a research study is carried out [36]. In respect of the present study, a descriptive survey design was adopted. The choice of this research design was founded on the assertion that descriptive studies seek to explain a phenomenon without alteration. Survey studies which are part of descriptive studies are conducted at a given time. In addition, survey research involves studying a sample of population with the intent of determining its characteristics and it is then concluded that the study population has similar characteristics to the sample. These descriptions were apt to the present study since it sought to examine the NHIF outpatient scheme and financial sustainability of Sub-County health facilities without influencing the situation as it was at the time of data collection. Moreover, the study was carried out over a period of about three months. The study, in addition, adopted a quantitative approach where the data collected were numerical in nature.

7.2 Target Population

Target population is defined as composition of subjects, elements, individuals, or entities that share related character traits which are under investigation [37]. In the present study, the management staff that comprises of administration staff, departmental heads, and finance staff working in the public health sector were targeted. The target population was too large to be studied. This necessitated narrowing it down to an accessible population which the study could manage to focus on. In respect of this study, the accessible population constituted the 183 management staff working with Sub-County hospitals in Nakuru County.

7.3 Sampling Frame

A sampling frame is defined as an exhaustive list of subjects, entities or individuals from which a sample is drawn. In this respect, therefore, all the 183 management staff working with Sub-County hospitals in Nakuru County as illustrated in Table 1 constituted the sampling frame.

Table 1: Sampling Frame

Sub-County Hospital	Management Staff
Naivasha	35
Bahati	35
Olenguruone	24
Elburgon	29
Gilgil	29
Molo	31
Grand Total	**183**

7.4 Sample Size Determination

It is stated that when the study population is relatively large (N > 100), it is necessary to carry out sampling in order to arrive at a sample that is a representative of the study population [38]. The sampling was important due to the limitations of time, finances and logistics to access all the members of the study population. Granted that the study population in the present context was significantly large (183), sampling was conducted.

A sample is defined as a subset of the study population [39]. The sample was determined using the formula developed by Nassiuma[40] as illustrated below.

$$n = \frac{NC^2}{C^2 + (N-1)e^2}$$ Where

n represents sample size
N represents study population (183)
C represents coefficient of variation (21% to 30%)
erepresents error margin (0.02 to 0.05)
Therefore, the estimated sample size (n) was calculated as shown below.

$$n = \frac{183(0.3)^2}{0.3^2 + (183-1)0.025^2}$$

n =   80.83
Sample (n) = 81 respondents
The sampled respondents were proportionately distributed as illustrated in Table 2 below.

Table 2: Sample distribution

Sub-County Hospital	Management Staff	Ratio	Sample
Naivasha	35	0.19	15
Bahati	35	0.19	15
Olenguruone	24	0.13	11
Elburgon	29	0.16	13
Gilgil	29	0.16	13
Molo	31	0.17	14
Total	**183**	**1.00**	**81**

7.5 Sampling Technique

Sampling technique describes the procedure followed to obtain the sampled respondents from the sampling frame (or study population). The suitability of the technique chosen is founded on the homogeneity or heterogeneity of the study population in nature and number. In respect of the present study, there was an assumption that all the management staff working with the Sub-County hospitals in Nakuru County were homogeneous in reference to their understanding of the NHIF outpatient scheme and financial sustainability. On the other hand, the distribution of the said staff across the aforementioned health facilities varied (heterogeneous) as indicated in Table 1. In this regard, therefore, stratified random sampling technique was adopted. In support of an earlier assertion [36], this sampling method ensured that there was both fair and equitable (proportionate) distribution of the sampled employees across the surveyed Sub-County hospitals as shown in Table 2.

7.6 Research Instrument

A research instrument is defined as a tool that is employed to facilitated collection of data. The choice of a suitable research instrument is subject to the research design, the type of data (quantitative or qualitative) and/or the respondents. This was a survey study, and as such was required to employ a questionnaire to collect data from the surveyed respondents [41]. The questionnaire was self-administered and structured. The questionnaire facilitated collection of primary categorical data that were on a Likert scale. The study also employed a data collection sheet to facilitate collection of secondary data on NHIF outpatient scheme and financial sustainability of Sub-County Hospitals in Nakuru County.

7.7 Pilot Test

A pilot study is a priory study that is carried out prior to the main study with the two important purposes [42]. It is conducted with a view of determining the feasibility of the main study. Secondly it is carried out with the aim of assessing probable weaknesses in the research instrument before it is used to in collection of data for the main study. In the context of the present study, the instrument was pilot tested with the object identifying probable weaknesses by determining both its validity and reliability. The pilot study was conducted among 9 randomly selected management employees working with Sub-County health facilities in the neighbouring Nyandarua County. The choice of the area for the pilot study was informed by the recommendation that the participants of this study were duly required to be excluded from the main study.

7.7.1 Validity testing of research instrument

Validity is defined as the extent to which a research instrument measures what it purports to measure [37]. A valid instrument, therefore, is able to facilitate collection of data that can be employed to effectively

address the study objectives. In this study, the content validity which cannot statistically be tested [43], was determined by consulting the assigned supervisor with the assumption that their expert opinion was adequate enough in assessing the content validity of the research questionnaire.

7.7.2 Reliability testing of research instrument

The reliability of the research instrument is used to determine the ability of the responses obtained when using that instrument to be replicated when undertaken under similar conditions [44]. In this study, the Cronbach's alpha coefficient (α) was used to test the reliability of the research questionnaire. The choice of this method was based on the argument that the data collected regarding the study constructs were on a Likert scale. The reliability threshold for the research instrument was alpha coefficient equal to 0.7 ($\alpha = 0.7$) or greater than 0.7 ($\alpha > 0.7$). As indicated in Table 3, all the study constructs returned Cronbach's alpha coefficients greater than 0.7. Therefore, the instrument was considered to be adequate or reliable for use in facilitating data collection.

Table 3: Results of reliability testing

Study Construct	Test Items	Cronbach's Alpha Coefficient
Utilization levels of NHIF outpatient cover	4	0.86
Financial sustainability	5	0.82
Overall reliability	**30**	**0.84**

7.8 Data Collection Procedure

A structured questionnaire was used to facilitate data collection from the sampled respondents. There are several merits when a structured questionnaire is employed in data collection. The tool is suitable when dealing with a relatively large number of respondents who are dispersed, a situation associated with survey studies [45]. Moreover, a structured questionnaire is able to facilitate collection of quantitative data which are easy to analyze and interpret the resultant findings. One of the major disadvantages of using questionnaires is that they are applicable only when sourcing data from literate respondents. Another demerit of a structured questionnaire is that it limits the free will of respondents when responding to the questions contained therein. However, in the context of the present study, the pros outweighed the cons of using a structured questionnaire, hence its suitability in this study.

The procedure of collecting data commenced by getting the necessary approval and consents. The approval of the university was sought prior to embarking on data collection. A research permit and authorization letter from the National Council of Science, Technology and Innovation (NACOSTI) were obtained. These were followed by getting the consent of the NHIF Nakuru Branch Manager, The County Director of Ministry of Medical Services and the superintendents of all the 6 Sub-County hospitals in the County. The administration of the questionnaire was effected by the researcher. The filled questionnaires were collected after a period of approximately 5 working days since the date of their issuance.

7.9 Data Analysis and Presentation

The data collected were first screened by ensuring that the collected filled questionnaires were in conformity with the instructions provided. This ensured that the outliers were highly minimized and possibly eliminated by getting rid of non-responses and inappropriate responses. The screened data were subjected to the necessary analysis with the facilitation of the Statistical Package for Social Sciences (SPSS) Version 24 programme. Data analysis encapsulated both descriptive and inferential statistics. Descriptive statistics assumed the form of frequencies, percentages, means, and standard deviations. On the other hand, inferential statistics were in form of Pearson's correlation coefficient and multiple regression. The following regression model was used to guide the inferential analysis.

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Where;

$\qquad$ Y represents financial sustainability

$\qquad$ β_0 represents constant

X_1 represents NHIF outpatient service utilization levels

ε represents error margin of the model

β_1 represent coeffeicient of the predictor variable

The results of the analysis were presented in form of tables. The null hypothesis was tested at 0.05 significance level ($p = 0.05$) using the t-statistics.

VI. Results And Discussions

This section covers the response rate obtained from the number of research instruments (questionnaires) filled and collected from the respondents. It also presents the results, interpretations and discussions relative to both descriptive and inferential statistics. The results herein are in line with the objective of the study and statement of the problem. Inferential results are juxtaposed against past empirical findings.

8.1 Response Rate

The number of questionnaires that are filled successfully and returned and/or collected from the respondents constituting the unit of analysis encompass the response rate. In respect of the present study, a total of 81 respondents constituted the unit of analysis (sample) which implies a similar number of questionnaires were issued. However, not all questionnaires were filled and returned and/or collected. Sixty-three questionnaires are the ones that were available for analysis which constituted 77.78% response rate. This response rate was considered sufficient in the analysis due to its significant representativeness.

8.2 Descriptive Statistics, Interpretations and Discussions

The study evaluated the views of the management staff working with Sub-County hospitals in Nakuru County in regard to NHIF outpatient scheme and financial sustainability of the stated health facilities. Precisely and in respect of the NHIF scheme, the study focused on the scheme's utilization levels, and also the financial sustainability of Sub-County Hospitals. The data collected and subsequently analyzed descriptively were on a Likert scale of 5 points where
1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, and 5 = Strongly Agree

8.2.1 Utilization levels of NHIF outpatient cover

The study further evaluated the utilization levels of outpatient cover provided by the National Hospital Insurance Fund (NHIF). The descriptive results to this effect are presented in Table 4.

Table 4: Descriptive statistics for utilization levels of NHIF outpatient cover

	n	SA	A	NS	D	SD	Mean	Std. Dev.
The principal policy holders and their dependent's often overuse the amount capitated by the NHIF	63	66.7	23.8	4.8	4.8	0	4.52	.800
The drugs allocated per quota are exhausted before the projected timelines	63	47.6	47.6	4.8	0	0	4.43	.588
The cost of discharging outpatient services often outweigh the allocated amount	63	42.9	52.4	4.8	0	0	4.38	.580
The funds spent in providing outpatient services outweigh the disbursed amount	63	42.9	52.4	4.8	0	0	4.38	.580

There was strong admission (mean = 4.52) that the principal policy holders and their dependents often overused the amount capitated by the NHIF. This was further supported by majority of the sampled managers (66.7%) strongly agreeing with this assertion, and the fact that the respondents' views were largely similar (stddev = 0.800). It was also found that majority of the respondentsadmitted that the drugs allocated per quota were exhausted before the projected timelines (95.2%); the cost of discharging outpatient services often outweighed the allocated amount (95.3%); and that funds spent in providing outpatient services outweighed the disbursed amount (95.3%). Indeed, not only were there no respondents that disputed the stated propositions, but also, on average, they agreed with the same (mean ≈ 4.00) and had related views regarding these assertion (stddev< 1.000).

8.2.2 Financial sustainability

Lastly, the study evaluated the aspect of financial sustainability of Sub-County hospitals operating in Nakuru County. The views of the management staff working with these public health facilities are presented in Table 5. The aspects of financial sustainability examined included financial planning, financial obligations, cash flows, and also reduction of pertinent costs.

Table 5: Descriptive statistics for financial sustainability

	n	SA	A	NS	D	SD	Mean	Std. Dev.
Unrestricted strategic financial planning	63	4.8	23.8	14.3	23.8	33.3	2.43	1.304
Enhanced strategic financial planning	63	4.8	23.8	4.8	38.1	28.6	2.38	1.263

Better addressing of short-term, medium term, and long-term financial obligations	63	0	19.0	28.6	19.0	33.3	2.33	1.136
Improved cash flows	63	19.0	4.8	4.8	23.8	47.6	2.24	1.552
Cost reduction	63	0	0	19.0	42.9	38.1	1.81	.737

In line with the results indicated in Table 5, it is apparent that, the sampled managers not only held significantly varying opinions, but also generally disputed that the Sub-County hospitals presently in operation in Nakuru County had realized unrestricted strategic financial planning (mean = 2.43; stddev = 1.304); enhanced strategic financial planning (mean = 2.38; stddev = 1.263); better addressing of short-term, medium term, and long-term financial obligations (mean = 2.33; stddev = 1.136); and improved cash flows (mean = 2.24; stddev = 1.552). The study also established that, respondents were almost unanimous (stddev = 0.732) in disagreeing that the aforesaid public health facilities had recorded reduction of various costs (mean = 1.81).

In support of the aforementioned results, the study found that majority of the respondents disputed that Sub-County hospitals in Nakuru County had realized unrestricted strategic financial planning (57.1%); and enhanced strategic financial planning (66.7%). It was also revealed that while 19.0% were in agreement, and 28.6% unsure, a majority (52.3%) of the sampled managers disagreed that the Sub-County hospitals had come up with better ways of addressing their short term, medium term, and long term financial obligations. It was also found that most of the sampled managers disputed that the aforestated health facilities had recorded improved cash flows (71.4%), and reduction in their various costs (81.0%).

8.3 Relationship between NHIF Utilization Levels and Financial Sustainability
The study examine how the utilization levels of NHIF outpatient cover related to financial sustainability of Sub-County health facilities in Nakuru County. In order to obtain the required results, Pearson's correlation analysis was conducted. The results are presented in Table 6.

Table 6: Correlation between NHIF utilization levels and financial sustainability

		Financial Sustainability
Utilization Levels	Pearson Correlation	.122
	Sig. (2-tailed)	.339
	n	63

According to the results captured in Table 6, it is clear that the relationship between utilization levels of NHIF outpatient cover and financial sustainability of Sub-County hospitals was positive, weak, and statistically not significant (r = 0.122; p > 0.05). The results were interpreted to mean, by increasing the utilization levels of the NHIF cover, financial sustainability of the mentioned health facilities was likely to increase by a small margin. This further meant that how much or frequently the NHIF outpatient cover was utilized by the principal and dependents did not matter substantively in regard to financial sustainability of the stated hospitals. The fact that there was weak relationship between utilization levels and financial sustainability could have been in support of earlier recommendations that the government should create awareness about the NHIF scheme so as to increase uptake and usage of the scheme [26].

8.4 Effect of NHIF Outpatient Scheme on Financial Sustainability
The study further analyzed the extent to which outpatient scheme provided by the NHIF, as characterized by its utilization levels affected financial sustainability of public health sector in Kenya, focusing mainly on Sub-County hospitals in Nakuru County. To obtain the pertinent results, utilization levels of the scheme were regressed against financial sustainability of the surveyed public health facilities.

Table 7: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.122[a]	.015	-.001	.99337

a. Predictor: (Constant), Utilization levels of NHIF Outpatient Scheme
According to the results indicated in Table 7, the results of the coefficient of determination (R^2 = 0.015) showed that the utilization levels of the NHIF outpatient scheme could explain 1.5% of the variation of financial sustainability of the aforementioned hospitals. Interpretatively, the utilization levels of the stated scheme hardly influenced the financial sustainability of the surveyed health facilities.

Table 8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.915	1	.915	.928	.339[a]
	Residual	60.193	61	.987		
	Total	61.109	62			

a. Predictor: (Constant), Utilization levels of the NHIF Outpatient

b. Dependent Variable: Financial Sustainability

The primary purpose of the results of the analysis of variance presented in Table 8 was to illustrate the suitability or significance of the empirical (regression) model illustrated below.

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Where;

Y represents financial sustainability

β_0 represents constant

X_1 represents NHIF outpatient service utilization levels

ε represents error margin of the model

β_1 represent coeffeicients of predictor variables

The results of the F-statistics (F = 0.928; p > 0.05) indicated that the aforestated regression model was found not to be significant at 0.05 level of signficance. Therefore, its application was not suitable in examining the effect of NHIF outpatient scheme' utilization levels on financial sustainability of the Sub-County hospitals in Nakuru County.

Table 9: Regression coefficients

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	1.018	1.273		.799	.427
Utilization Levels of NHIF Outpatient Cover	.276	.286	.122	.963	.339

a. Dependent Variable: Financial Sustainability

The results presented in Table 4.20 facilitated interpretation of the regression model as espoused below.

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$

$Y = 1.018 + 0.276 X_1$

The results shown above implied that in order to realize a unit increase in financial sustainability (Y) of Sub-County hospitals, there had to be 0.276 unit change in utilization levels of NHIF outpatient scheme while holding other factors constant ($\beta_0 = 1.018$). It was found to be advisable for the Sub-County hospitals and the relevant authorities tasked with policy formulation at the NHIF to closely monitor various issues that influence utilization levels of the NHIF outpatient cover. This would enable them to understand the best measures to put in place in order to address the spiraling utilization of the outpatient scheme and thus potentially improve financial sustainability of the aforestated health facilities. The results of this study concur with earlier findings that the highest proportion of revenues for the hospitals came from the fee charged for services offered to patients [7]. Therefore, the higher the utilization levels of healthcare services through the NHIF outpatient scheme, the greater the financial sustainability.

8.5 Testing Null Hypothesis

The research hypothesis was tested at p-value = 0.05 at using the t-statistics.

H_{01}: There is no significant relationship between utilization levels of the NHIF outpatient scheme and financial sustainability of Sub-County hospitals in Nakuru County.

H_A: There is significant relationship between utilization levels of the NHIF outpatient scheme and financial sustainability of Sub-County hospitals in Nakuru County.

Results of t-statistics = (t = 0.963; p > 0.05)

The results indicated the relationship between the utilization levels of the NHIF outpatient scheme and financial sustainability of the stated health facilities was not statistically significant. The null hypothesis (H_{01}) was, therefore, not rejected. The results indicated that increasing the utilization levels of the scheme hardly influenced the financial sustainability of the Sub-County hospitals in Nakuru County, Kenya.

VII.   Conclusions

The study sought to understand the effect of utilization levels of NHIF outpatient cover on financial sustainability of Sub-County hospitals. It was inferred that, how much or frequently the NHIF outpatient cover was utilized by the principal and dependents did not matter substantively in regard to financial sustainability of the stated hospitals. The study also concluded that NHIF outpatient scheme hardly changed the services sought from the Sub-County hospitals in Nakuru County. It was also deduced that diseases and/or ailments are the ones that persuade patients to seek healthcare as opposed to provision of health services for free or at discounted rates.

The main subject of the study was the financial sustainability of Sub-County hospitals. It was concluded that the outpatient scheme's introduction hardly altered the pattern of the revenue collected by the aforementioned health facilities. The study also inferred that the medical fees paid by patients prior to the scheme's introduction mirrored the funds reimbursed through the NHIF outpatient scheme. It was inferred that the total revenue realized by the health facilities was highly dependent on utilization levels and was also in tandem with the administrative costs incurred in provision of outpatient health services. The study concluded that the capitated amount did not play a substantive role in respect of the total revenue generated by the aforestated hospitals. It was concluded that the capitated amount hardly played a substantive role in changing the revenue collected from the dispensation of outpatient services, hence matter little in respect of financial sustainability of the stated hospitals. In general, it was concluded that the NHIF outpatient scheme could explain 25.0% of the variation of financial sustainability of the surveyed hospitals. Lastly, it was concluded that the utilization levels of the NHIF outpatient scheme were the most important attribute of the scheme in relation to financial sustainability of the aforestated hospitals.

VIII.   Recommendations

It is advisable for the Sub-County hospitals and the relevant authorities tasked with policy formulation at the NHIF to closely monitor various issues that influence utilization levels of the NHIF outpatient cover. This would enable them to understand the best measures to put in place in order to address the spiraling utilization of the outpatient scheme and thus potentially improve financial sustainability of the aforestated health facilities.

Having understood the contribution of NHIF outpatient scheme on financial sustainability of public health facilities, it is paramount going forward, for the hospitals to ensure that the utilization levels of the scheme is proportional to the capitated amount and also the reimbursed funds. It is also important to ensure that there is a ceiling in respect of number of beneficiaries' visits to a given public health facility and the health care services extended to them by the facility in line with the amount of NHIF outpatient cover. Since the foregoing is likely to be replete of hue and cry from the general public, both the national and devolved governments should increase the budgetary allocation to all the public health facilities in Kenya.

References

[1].   Cohen, R.A., & Martinez, M.E. (2014). Health Insurance Coverage: Early Release of Estimates from theNationalHealth Interview Survey, 2014. Washington DC: National Center for Health Statistics.
[2].   OECD (2014). OECD Health Statistics 2014: How does South Africa Compare? Accessed on August26, 2017 from http://www.oecd.org/els/health-systems/Briefing-Note-SOUTH-AFRICA-2014.pdf
[3].   Barber, S.L., & Yao, L. (2010). Health Insurance Systems in China: A briefing Note. Geneva: World Health Organization.
[4].   Rao, K, Ling X., Barber, S.L., Yao, L., Qian, J., Cai, M., Xin, Y., Gao, J., Xu K., &Boerma, J.T. (2010). Changes in Health Service Use and Expenditure in China during 2003-2008:   Results   from the National Health Services Surveys.
[5].   Franklin, D. (2010). American College of Medical Practice Executives. Journal of Law, Medicine, and Ethics, 23(10), 71–82.
[6].   Chege, E. (2013). Green Supply Chain Management Practices and Supply Chain Performance of Private Hospitals in Nairobi, Kenya. International Journal of Business and Social Research, 4(2), 7–9.
[7].   Abour, G.O. (2012). Health Care Financing Strategies and their Impact on Financial Sustainability (Case of Faith Based Hospitals in Kenya). Unpublished MBA Project, Kenyatta University,   Kenya.
[8].   World Bank (2014). Improving Health Care for Kenya'sPoor. Accessed on August 29, 2017 from http://www.worldbank.org/en/news/feature/2014/10/28/improving-healthcare-for-kenyas-poor.
[9].   Adei, D., Mireku, E. . A., & Sarfo, I. . (2015). An Assessment of the National Health Insurance Scheme in the Sekyere South District, Ghana. Current Research Journal of Social Sciences, 7(3),   67–80.
[10].   Karanja, J. (2014). Challenges in Provision of Universal Health Care by the National Hospital Insurance Fund, Kenya. International Journal of Business and Management, 2(3), 45–50.
[11].   [11]. Kimani, J.K., Ettarh, R., Kyobutungi, C., Mberu, B., &Muindi, K. (2012). Determinants forparticipation in a public health insurance program among residents of urban slums in Nairobi, Kenya: Results from a cross-sectional survey. BMC Health Services Research, 12(66), 1-11.
[12].   Republic of Kenya (2015). Exploring 10 Years of Health Service Cost and Use in Kenya. Nairobi: MinistryofHealth. Accessed on April 20, 2018 from https://www.healthpolicyproject.com/eop/pubs/746_KHHEUSSummaryBrief.pdf
[13].   Midiwo G, (2007). Quality management actors and instruments and their institutional links to social healthprotection mechanisms. In Conference on Assuring Quality Health Care through Social Health Protection: The role of strategic purchasing and quality management: 2007. Edited by: FranziskaFuerst, InkeMathauer. Kigali, Rwanda, 1-17.
[14].   Gurley, J.G., & Shaw, E.S. (1960). Money in a Theory of Finance. Washington D.C: Brookings Institution.
[15].   Allen, F., &Santomero, A.M. (1998). The theory of financial intermediation. Journal of Banking &Finance, 21, 1461-1485.

[16]. Leland, H.E., & Pyle, D.H. (1977). Informational asymmetries, financial structure, and financial intermediation. Journal of Finance 32, 371-387.
[17]. Diamond, D. (1984). Financial intermediation and delegated monitoring. Review of Economic Studies 51, 393-414.
[18]. McKinnon, R. (1973). Money and Capital Economic Development. Washington D.C: Brookings Institution.
[19]. Abraham, A. (July 6-8, 2003). Financial sustainability and accountability: A model for nonprofit organizations. A paper presented at the proceedings of AFAANZ 2003 Conference, Brisbane, Australia.
[20]. Herzlinger, R.E. (1996). Can Public trust in nonprofits and governments be restored?Harvard Business Review, 74(2), 97-107.
[21]. Lyons, M., & Hocking, S. (1998). Australia's Nonprofit Sector: Some Preliminary Data. Sydney: Centre for Australian Community Organizations and Management, University of Technology.
[22]. Bryce, H.E. (1992). Financial and Strategic Management for Nonprofit Organizations. (2nd Ed.). Englewood Cliffs, New Jersey: Prentice Hall.
[23]. Haller, L. (1982). Financial Resource Management for Nonprofit Organizations. Englewood Cliffs, New Jersey: Prentice Hall.
[24]. Fullwiler, S.T. (2015). Sustainable finance: Building a more general theory of finance. Working Paper No. 106. Accessed on September 5, 2017 from http://www.binzagr-institute.org/wp content/uploads/2015/04/WP-106.pdf.
[25]. Ndung'u, T.T. (2015). Factors influencing Uptake of National Health Insurance in the Informal Sector: A Case of Ithanga Division in Murang'a County, Kenya. Unpublished M.A. Project, University of Nairobi, Kenya.
[26]. Namuhisa, J.A. (2014). Determinants of Uptake of National Hospital Insurance Fund Scheme by the Informal Sector in Nairobi County, Kenya. Unpublished MBA Project, Kenyatta University, Kenya.
[27]. Bossman, E. (2017). An assessment on the effect of capitation on cost and utilization of health services: A case of the national health insurance authority of Ghana. Master in Public Health Thesis, Norwegian University of Science and Technology, Norway.
[28]. Duku, S.K.O., Boadi, F.A., Amponsah, E.N., &Arhinful, D.K. (2016). Utilization of healthcare services and renewal of health insurance membership: Evidence of adverse selection in Ghana. Health Economic Review, 6, 1-12.
[29]. Prinja, S., Chauhan, A.S., Karan, A., Kaur, G., & Kumar, R. (2017). Impact of publicly financed health insurance schemes on healthcare utilization and financial risk protection in India: A systematic review. PLOS ONE 12(2), 1-19.
[30]. Hullegie, P., & Klein, T.J. (2009). The effect of private health insurance on medical care utilization and self-assessed health in Germany. HEDG Working Paper 09/17.
[31]. Okungu, V., Chuma, J., & McIntyre, D. (2017). The cost of free health care for all Kenyans: assessing the financial sustainability of contributory and non-contributory financing mechanisms. International Journal for Equity in Health, 16, 1-13.
[32]. Anyika, E.N. (2014). Challenges of implementing sustainable health care delivery in Nigeria under uncertainty. Journal of Hospital Administration, 3(6), 113-126.
[33]. Sekyere, E.O., &Bagah, D.A. (2014). Towards a sustainable health care financing in Ghana: Is the national health insurance the solution. Public Health Research, 4(5), 185-194.
[34]. Liaropoulos, L., &Goranitis, I. (2015). Health care financing and the sustainability oh health systems. International Journal for Equity in Health, 14, 1-4.
[35]. Thomson, S., Foubister, T., Figueras, J., Kutzin, J., Permanand, G., &Bryndova, L. (2009). Addressing Financial Sustainability in Health systems. Geneva: World Health Organization.
[36]. Kothari, C.R. (2004). Research Methodology; Methods & Techniques. New Delhi: NewAge International Publishers
[37]. Sekaran, U., & Bougie, R. (2011). Research Methods for Business: A Skill Building Approach. (5thEd.). New Delhi: Aggarwal Printing Press.
[38]. Kothari, C.R. (2008). Research Methodology; Methods & Techniques. New Delhi: New Age International Publishers
[39]. Orodho, A. (2008). Techniques of Writing Research project & Reports in Educational and Social Sciences. Maseno: Kanezja HP Publishers.
[40]. Nassiuma, K. (2008). Survey sampling: Theory and methods. Nairobi: NairobiUniversity Press.
[41]. Mugenda, O.M., &Mugenda, A.G. (2003). Research Methods: Quantitative and Qualitative Approaches. Nairobi: Acts Press
[42]. Teijlingen, E.R., & Hundley, V. (2001). Social Research Update: The Importance of Pilot Studies. Guildford: Department of Sociology, University of Surrey.
[43]. Kimberlin, C.L., &Winterstein, A.G. (2008).Research fundamentals. Am J Health-Syst Pharm, 65
[44]. Cooper, R., & Schindler, P. (2008). Business Research Methods. (10th Ed.). New York: McGraw-Hill Publications.
[45]. Mugenda, O.M., &Mugenda, B.G. (2009). Research Methods-Quantitative and Qualitative Approaches.Nairobi:ActsPress Publishers.