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ABSTRACT

This study intends to establish the effects of various forms of health insurance schemes financing on health insurance uptake in Kenya. The specific objectives of the study included; to establish the effect of direct private health insurance schemes finance, to determine the effect of employment-based health insurance schemes finance and to establish the effect of social health insurance scheme financing on health insurance uptake in Kenya. The study sort to investigate the moderating effect of government policy on the relationship between health insurance scheme financing and health insurance uptake in Kenya. The study was underpinned by Moral Hazard Theory, Information Asymmetry Theory, Purchase Behaviour Theory and Expected Utility Theory. This study used descriptive research design. The target population comprised of 23 insurance companies that provide health insurance schemes and the national health insurance fund. Due to the small number of target population, census technique was used. The study applied longitudinal research design. Autoregressive Distributed Lag model was adopted and used secondary time series data spanning from 1980 to 2023. Secondary data was obtained from certified financial statements of the health insurance companies. Descriptive statistics focused on frequency distributions, measures of central tendencies and variability. The inferential statistics included correlation results, Autoregressive Distributed Lag outcome, t-tests, f-test and test of hypotheses. Data presentation used textual, tabular, graphical and charts. The findings have established that direct health insurance scheme financing has a positive and significant effect on health insurance uptake in Kenya. The results showed that employment based health insurance scheme financing had no effect on health insurance uptake in Kenya both in the short term and in the long run. Social health insurance scheme financing was found to have a positive and significant effect on health insurance uptake in Kenya. Government policy had moderating effect on the relationship between health insurance schemes and health insurance uptake in Kenya. The study has recommended that the government should put proper system to increase direct private health insurance scheme financing. The government should also institute policy to consolidate different health insurance scheme financing with different premiums for effectiveness and equity.

Key Words: *Direct Private Health Insurance Schemes, Employment-Based Health Insurance Schemes, Social Health Insurance Scheme, Government Policy*

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INTRODUCTION

Health insurance scheme is an institutional and financial mechanism that helps households and private individuals to set aside financial resources to meet costs of medical care in event of illness (Munguti, 2020). It is based on the principle of pooling funds and entrusting management of such funds to a third party that pays for healthcare costs of members who contribute to the pool. The third party can be government, employer, insurance company or a provider. (World Health Organization, 2017). In health insurance scheme, every member of the insurance scheme pays the premiums irrespective of whether he or she gets sick. As such, insurance schemes have a higher potential for cost recovery (Sanogo, Fantaye & Yaya, 2019). By pooling the risk of large healthcare expenditures of many people, health insurance can make necessary healthcare affordable to all the insured individuals. Due to this risk aversion behavior, many individuals seek health insurance facilities where they effectively pool their risks through an insurer scheme. Health insurance schemes are also referred to as medical insurance scheme, and, therefore, provides financial support to the insured person in the event of hospitalization. It is an effective program to manage medical bills and costs for people who have medical care needs (Bruce, 2020).

In many countries, especially the developed economies, having health insurance has proved important since health insurance coverage helps the sick people to get timely medical care and improves their lives and health without the costs worry. Having health coverage is associated with better health-related outcomes. Poor health conditions can affect productivity of an individual through absenteeism and presentism at work. Absenteeism is a situation of a worker not being present at the workplace because of injury or illness. It prevents the worker from contributing to output and may also affect the productivity of the coworkers when tasks requiring collaboration are suspended or redistributed. Presentism is the loss of at-work productivity caused by a lack of physical or mental energy needed to complete the tasks, resulting from increased workplace accidents and treatment costs, and the possible spread of illness to other employees. (Randall & Hadley, 2007).

In Kenya, most health systems are primarily funded through the fiscal budget and Out of Pocket (OOP). Health expenditure is one of the main components of fiscal budget in Kenya. Due to the government constrained fiscal space, it came up with OOP as a cost-sharing mechanism on health expenditure (Syombua, 2018). OOP, however, proved to be a burden to most of the citizens. As a proportion of total government budget, allocations to the health sector increased from 7.8 percent in FY 2012/2013, to 9.1 percent in FY 2019/2020. As a share of GDP, government health allocations also increased from 1.9 percent to 2.2 percent over the same period. Despite the significant increases in health sector budget allocations, current allocation trends still fall short of the government's pledged target of 15 percent of the total national budget to health as articulated in the 2001 Abuja Declaration (African Union, 2021).

Health insurance schemes act as a hedging mechanism to those individuals who cannot afford medical services and as a way of avoiding unnecessary out of pocket payments which can render indigent population incur catastrophic health expenditures and impoverishment in the event of sickness or even prevent one from accessing health care services. If the insured gets hospitalized, the insurance companies are able to pay the hospitalization costs using the pooled finances. The costs include admissions treatment and medications. Given that each year, there is always a high possibility that a given Kenyan needs to consult a doctor on health-related issues, the costs for such consultation act as a deterrent to health services utilization. With an insurance financing, a Kenyan can enjoy the services without the worries of costs. In addition, the insured is not required to incur expenses relating to the medicine in most cases after visiting a hospital. This promotes

health accessibility, utilization, and results to a healthy and productive population (IRA, 2022)

The National Health Insurance Fund (NHIF) in Kenya has been liberalized owing to the increase in the cost of medical services. They consist of the Social Health Insurance Scheme Financing (SHISF) and Private Health Insurance Schemes Financing (PHISF). The SHISF is done through the National Hospital Insurance Fund (NHIF), private non-profit and community based. NHIF is a public-financed health insurance scheme and has mainly focused on formal sector employees (IRA, 2018). Community-based health financing schemes are designed to meet the needs of low-income earners who are not able to fit private health insurance schemes. For community-based health financing schemes, community members initiate, finance and manage the schemes in a bid to ensure that their members access health care without financial strain. According to the Kenya Community-Based Health Association Financing (KCBHAF), there were 38 CBHSF, with 100,510 principal members' contributions, covering only 1.2 percent Kenyans (Muiya, 2017). In SHISF, health services are paid for through contributions to a health fund or donations.

Health insurance policies in the country are normally instituted by the government through the health sector and Insurance Regulatory Authority (IRA). The policies revolve around management of financing systems. These management's needs are geared toward guaranteeing health availability, accessibility, and affordability to those in need of healthcare. The policies are also guided by World Health Assembly resolution requiring countries to improve and streamline their health financing systems placing emphasis on the need to safeguard households from catastrophic healthcare expenditures and impoverishments by reducing the reliance on direct payments such as user-fees and developing pre-payment financial contribution systems for their respective health sectors (UN, 2015)

In recognition of the important role the HISF plays, the Government of Kenya has developed some key strategies. Some of the key features of these strategies include social health insurance to increase access to health care, a reduced role for the Ministry of Health in service delivery, more delegation of authority to provincial and district level, and promoting more public-private partnerships (PPPs). The effect these policies are having on health and insurance uptake is yet to be established. The focus of NHIF has been mainly on formal sector employees. This has left out those in the informal sector, those in agriculture, and pastoralists. The government plans to transform the current NHIF to a National Social Health Insurance Fund (NSHIF) as a way of ensuring equity and access to health services by the poor and those in the informal sector, who have been left out for the forty years that the NHIF has been in existence. The effect of these policy reforms on healthcare uptake, especially in the presence of the private health financing schemes, needs to be established. In the current study, government policy will be used to establish the its moderating effect on the relationship between Health Insurance Scheme Financing and Health Insurance Uptake in Kenya.

Statement of the Problem

The access and affordability of health services in Kenya faces tremendous challenges as result of inadequate budget, cost-effectiveness and poverty at households' level. The interventions and policies instituted by the government intended to improve the health utilization by the citizens have not solved the problem of health care access. The cost associated to health care access has pushed many households into poverty (Pacific Prime International, 2020). NHIF fund has not been properly administered and the insured find it difficult to access registered hospitals and sometimes non-payments and irregular claims by hospitals. In addition, citizens are forced to seek additional cover from the private insurers to get full medical care cover. Private health insurance financing schemes has only managed to attract

about 6 percent of Kenyan population. Consequently, the uptake of health care is low due to cost associated. At the same time, the prevalence of health insurance uptake in the country is low and not equally distributed in the country. Consequently, high medical expenditures have severely affected the consumption of other goods and services, and savings of an individual or a family. It would be advisable, therefore, that all Kenyans households get subscribed to HISF based on their needs to mitigate any the losses arising from health-related expenditures. The large number of households, companies and individual contributions will ensure adequate financing for the health insurance schemes by pooling funds. In addition, government policy should be employed as a mediating factor between HISF and Health Insurance Uptake. However, little is known about the practical challenges HISF and Health Insurance Uptake face that causes limited access to quality health services especially for the low-income populations which this study sort to fill.

Several studies (Otieno *et al*. (2018), Nguhiu, Barasa, and Chuma (2017), and Kazungu and Barasa (2017)) have studied on health insurance uptake in various parts of Kenya and applying various analytical approaches and different types of data. They have concluded on the low uptake of health insurance in Kenya. Other existing studies have focused on either NHIF as the only health insurance, on informal sector, case studies or even on women. Unlike the previous studies, this study focused on health insurance uptake among all individuals in the society regardless of the sector they are in and based on all the health insurance financing schemes existing in the country using a nationwide data. The current study focused on the relationship between HIFS and health care insurance uptake of health in Kenya.

Research Objectives

This study aimed at looking at health insurance schemes financing in Kenya and the effects they have on healthcare insurance uptake. The study was guided by the following specific objectives:

- Establish the Effect of Direct Private Health Insurance Schemes Finance on Health Insurance Uptake in Kenya
- Determine the Effect of Employment-Based Health Insurance Schemes Finance on Health Insurance Uptake in Kenya
- Find out the Effect of Social Health Insurance Scheme Financing on Health Insurance Uptake in Kenya
- Establish the Mediating Role of Government Policy on Health Insurance Scheme Financing and Health Insurance Uptake in Kenya

Research Hypotheses

H_{01}: Direct Private Health Insurance Schemes Finance has no significant effect on Health Insurance Uptake in Kenya.

H_{02}: Employment-Based Health Insurance Schemes Finance has no significant effect on Health Insurance Uptake in Kenya.

H_{03}: Social Health Insurance Scheme Financing has no significant effect on Health Insurance Uptake in Kenya.

H_{04}: There is no significant moderating effect of Government Policy on Health Insurance Scheme Financing and Health Insurance Uptake in Kenya.

LITERATURE REVIEW

Moral Hazard theory.

Arrow (1963) introduced Uncertainty and the Welfare Economics Theory of Medical Care theory under the presence of moral hazard. Moral hazard refers to the tendency of people to consume more healthcare services when they are insured, leading to higher healthcare costs. This is because people are less likely to consider the cost of healthcare services when they are not paying for them. The theory conjectured that health insurance may induce individuals to exert unobserved effort in maintaining their health. That is, because health insurance covers the financial costs that would be caused by poor health behaviors, individuals may have less incentive to avoid them when they have

insurance coverage. Moral hazard hence creates an obstacle to the consumption-smoothing purpose of insurance.

The theory notes that, under best insurance contract, it equalizes marginal utility across different states of health. However, the existence of moral hazard makes it infeasible. If individuals' health insurance utilization responds to the price the households have to pay for it and their underlying health status, the cost of providing insurance, in presence of moral hazard will rise and individuals may no longer be willing to pay the break-even price of full health insurance scheme. Therefore, the presence of moral hazard leads optimal insurance contracts to be incomplete, and not able to strike a balance between reducing risk and maintaining incentives. The current study made use of moral hazard concept to test how it has influenced the employer based health insurance financing in Kenya.

Information Asymmetry theory.

Akerlof (1970) developed a market with Hidden Information (information asymmetry) and the Choices of Optimizing Agents Theory. The key feature of markets with advance selection is that costs depend on which consumers purchase their products; as a result, market costs are endogenous to price. Therefore, demand varies with not only prices, but also the costs of insuring the (endogenous) market participants and covering the underlying (privately known) information about risk type and preferences.

In the analysis of the dynamics of private health insurance markets, Chollet and Lewis (1997) note that all systems of voluntary purchase of insurance suffer from the problem of adverse selection. Because individuals have better knowledge of their own health status and potential need for health care than insurers, and because those who expect to use health services are more interested in buying insurance coverage, persons who seek to purchase health insurance voluntarily tend to be costlier to insure than the average person in the population. Consequently, private insurers must develop techniques to limit adverse selection or its financial effects.

Purchasing Behaviour Thoery

Saltman and Figueras (1997) gave a Role of the Purchaser Theory. That is, specific functions associated with allocations to providers. The theory indicates that, largely because of information asymmetries that give providers powerful influence over consumer demand for health care, incentives and regulations oriented towards the supply side of the market (e.g., provider payment methods) are far more powerful policy tools than those oriented solely towards the demand side (e.g., user charges to limit excess consumption due to the effects of moral hazard). Thus, a critical factor for the performance of health insurance financing systems is the extent to which purchasers use their financial power actively to encourage providers to pursue efficiency and quality in service delivery. To the extent that purchasers are simply financial intermediaries, paying providers without attaching meaningful conditions on their performance, the result is invariably provider-led cost escalation, often accompanied by potentially harmful expansion of unnecessary service delivery. An alternative likely to be more consistent with health policy objectives would be for purchasers to use their financial power to promote efficient and high-quality service delivery. The current study made use of purchasing behavior theory to anchor the insurance uptake variable.

Expected Utility Theory

This theory by Nyman (1999), states that people make decisions by considering the possible outcomes of their choices and then choose the option with the highest expected utility. It is a decision-making theory that assumes that people make decisions. This theory opines that the value of health insurance is realized from the medical expense relieve derived from the scheme. The utility derived from premium payment is higher than the costs in terms of opportunity cost of engaging in acquisition of other goods and services.

Medical health insurance is therefore able to cover cost of treatment since that cost is most of the times more than the premium paid. The treatment costs may wipe all the gains that he had made from not paying the premium. Thus the current study made expected utility theory to anchor the social health insurance variable.

Welfare Maximization Theory

In the context of Benoulli (1954) in Welfare Maximization Theory, Nyman (2001) identify that organization or individuals attempt to maximize the utility by purchasing health insurance schemes in order to have access to income transfer which are paid from the health insurance schemes when they get sick. The premiums payment is made to the health insurance schemes. The people who make contributions to the schemes, some do not fall sick during the period. Others will be sick and make claims for health services needed. The insurer makes payment hence increasing the purchasing power of the insured. This according to Nyman (2001) should increase the purchasing power and enable one to access the unaffordable services. Welfare is thus increased. The study investigated whether the insurance induced healthcare utilization (uptake) results in an increase or reduction in social welfare.

Empirical Literature

Namuhisa (2014) studied on the determinants of uptake of National Hospital Insurance Fund scheme by the informal sector in Kenya. Descriptive study design was adopted while stratified random sampling method was also applied to select the respondents. At univariate level, descriptive analysis using frequencies and percentages was carried out while at bivariate level, multinomial logistic regression was carried out to determine the association between the dependent and independent variables. In the findings only 32% of respondents were enrolled in NHIF scheme, while 7.1% were enrolled in another type of health scheme. The logistic regression model found that NHIF uptake was significantly associated with income level, awareness of NHIF benefits and access to NHIF outlets.

Osei-Akoto & Adamba, (2011) studied on the determinants of uptake of National Hospital Insurance Fund Scheme by the Informal Sector In Nairobi County, Kenya. The study noted that the most important social and economic determinants of health insurance uptake was income. Further, the study established that income levels determined the overall living conditions, psychological functioning and influence health related activities. The findings also established that the amount of health insurance purchased in both developed and developing countries was significantly determined by the levels of incomes.

Mathauer (2008) in the study on analyzing and understanding the demand for (social) health insurance of informal sector workers in Kenya by assessing their perceptions and knowledge of and concerns regarding health insurance and the Kenyan National Hospital Insurance Fund (NHIF), found that the most critical barrier to social health insurance financing and enrollment was lack of knowledge by informal sector on its enrollment options and procedures. The study used descriptive statistics and only informal sector. Communication and marketing strategies by the scheme has mostly been employed in targeting those in the formal sector as NHIF has always been viewed as a statutory deduction with no immediate benefits by many contributors leading to possible underutilization by those in this sector.

According to Cichon, *et al.,* (1999), the ultimate objective of all financial modelling in health insurance schemes is to support policies that improve the effectiveness or efficiency of healthcare delivery systems. Improving effectiveness of the delivery health insurance finance system is reminiscent of achieving healthcare. Enhanced efficiency is achieving these gains at the lowest possible cost or maximizing the output for a given level of inputs. All national social health financing policies, and hence all national health policies, operate under financial, fiscal and

political constraints. Financial resources are always limited, and political constraints might include preferences for certain types of healthcare delivery or financing systems which cannot always be explained according to efficiency or the effectiveness criteria. Cichon, *et al.,* (1999) argued that some countries in Central Europe, for instance, maintain expensive forms of social insurance systems, despite evidence from other European countries that a national health service would still achieve the same or similar health outcomes at a lower level of spending. This is clearly a political choice determined by an implicit political negotiation process between the general public, the government and healthcare providers. Within its financial, fiscal and political constraints, however, every healthcare system should operate at the highest possible level of efficiency. Ideally, it should achieve the greatest possible health gains given these constraints. Monitoring the efficiency of a large financial transfer system, such as a healthcare system, requires costing – cost units, cost centers and departments, clearly defining the costing processes.

Conceptual Framework

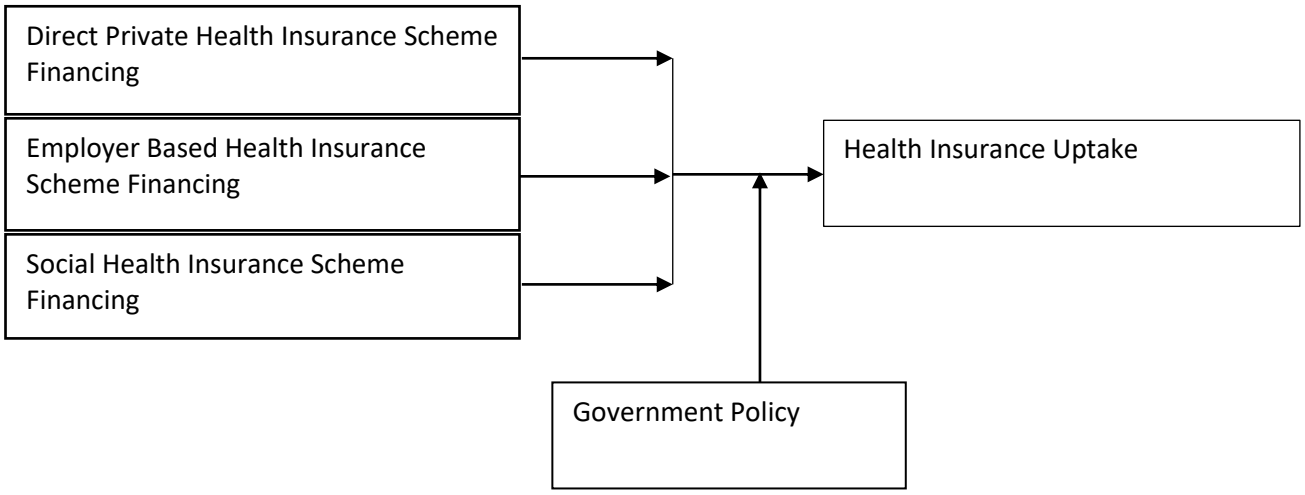

Figure 1: Conceptual Framework

METHODOLOGY

The study applied longitudinal research design. The study will be all the insurance companies providing health insurance and the national hospital insurance fund. This means that the target population will be 35 entities. Data sources will be Kenya National Bureau of Statistics, the National Treasury Annual Reports, Central Bank of Kenya reports, the International Monetary Fund Yearbook, and the Insurance Regulating Authority (IRA).

The research made use of secondary yearly data for the period running from 1980 to 2023, for all the variables. Given the number of coefficients to be estimated, the amount of data points evaluated was adequate to provide reliable estimations. The data was time series data.

Quantitative data was utilized, and analysis included descriptive statistics and inferential statistics. Data determined the time series model to be used to estimate the objectives like autoregressive models. The study used OLS data estimation technique for the estimations.

The study used several empirical diagnostic tests. They included the multicollinearity test, unit root test, heteroscedasticity, and autocorrelation. A Variance Inflation Factors (VIF) was generated and evaluated to test for multicollinearity. For the purpose of investigating or identifying non-stationarity, the study utilized unit root tests. This is

to prevent spurious results. A stationary series or cointegrating models was utilized in this study. The unit-root test was carried out using the Augmented Dickey-Fuller unit-root method. When it gets determined that variables are not stationary, differencing may be employed until the stationarities are attained. Heteroscedasticity test is required to determine if there is fluctuation in the error terms between observations or whether the research variables have a constant variance across data. In the presence of heteroscedasticity, the model is bound to suffer from spurious regressions. For heteroscedasticity, the study utilized the Breusch pagan test. If there is an absence of homoscedasticity, more variables or use of lags would be added in accordance with test.

Specifically, the autocorrelation of the random error terms in successive time periods is referred to as "correlation." If autocorrelation is present both before and after estimation, then its biasness would result in incorrect estimates being produced. To determine autocorrelation in the research, the study used the Breusch-Godfrey test.

FINDINGS AND DISCUSSIONS

Descriptive Analysis Results

The section presents a brief description and summary statistics for the variables used in the study. The statistics include mean, standard deviation and the range of values of the observations as presented in table 1. The summaries are based on data collected from various sources for the period 1980 to 2023.

Table 1: Summary Statistics on variables

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Observations
Employment Health Insurance Financing	207.1245	65.66341	971.5587	3.444071	283.7904	1.285609	3.319438	44
Health Insurance Uptake	28.70824	26.77756	40.89283	13.08887	6.012134	0.423802	3.147399	44
Individual Health Insurance Financing	21.41109	3.250696	134.3931	0.007075	35.16111	1.756860	5.095419	44
Per capita Income	80.83791	48.33221	293.7040	5.300000	79.50395	1.146689	3.181783	44
Government Policy	4.900353	4.849467	6.975554	3.627142	0.857210	0.643072	2.868246	44
Social Health Insurance Financing	261.9471	74.66735	1480.863	3.706650	414.6462	1.843161	5.029610	44

Variables at levels were measured in Kenya Shilling and as a percentage of the total population; Std Dev. is standard deviation

On average, the level of Health Insurance Uptake in Kenya was 28 percent of the total population between the year 1980 and 2023. The minimum uptake was 13 percent while maximum was about 41 percent. A standard deviation of 6 indicated percent indicates a low variation from the mean during the period under the study. The descriptive statistics also indicated that the average Employment Health Insurance Financing was about Ksh. 207 per individual with a range from Ksh. Ksh 3 to Ksh 972 and a standard deviation of Ksh. 284 during the study period. The Individual Health Insurance Scheme Financing mean value of Ksh. 21.4 per individual over the study period, with a range from Ksh. 0. to Ksh. 134 per individual and a standard deviation of Ksh. 34 as given in table 4.1. Social Health Insurance Financing indicated a mean

of Ksh 261.9, a range of Ksh. 3.7 to Ksh. 1480.9 with a standard deviation of Ksh. 414.6. This confirms that the Social Health Insurance Scheme Financing takes the larger share of health insurance financing scheme followed by Employment Based Health Insurance Scheme Financing. The per capita income had an average of Ksh 80 with a minimum of Ksh. 5 and a maximum of Ksh. 293.7 with a standard deviation Ksh. 79.5.

Table r1 shows the Government Policy to have ranged between 3.6 and 6.98 during the period 1980 to 2023. The mean and the median were 4.8 and 4.9 respectively. The standard deviation was 0.86. The statistics indicate a constancy during the study period.

Inferential statistics

Unit Roots Tests

To detect presence of unit root in the series, the study employed the Augmented Dickey-Fuller (ADF) tests. The ADF test for stationarity in a series y involved estimating the equation

$$\Delta y_t = \mu + \beta t + \gamma\, y_{t-1} + \sum_{i=1}^{P} \emptyset_i \Delta y_{t-i} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{eqn } 1$$

Where μ is the drift (intercept), t is the trend, i equal the number of lags in Δy_{t-i}, P is the maximum number of lags determined using Schwartz Criterion (SC) and ε_t is the random error term. The null hypothesis $H_O: \gamma = 0$ (unit root) was tested against the alternative hypothesis $H_A: \gamma < 0$ (no unit root). If the computed test statistics were found greater than the critical value, the null hypothesis ware not rejected. If H_O could not be rejected, then the time series variable contained a unit root and hence nonstationary otherwise it was stationary. If its first difference was tested and found stationary, the series was integrated of order one (Green, 2008; Gujarati, 2004; Dickey and Fuller, 1979). The test results are shown on table 2.

Table 2: Unit Root Tests

Variable	Type of Test	Form of Test	Test Statistic	Critical Value at 5 %	Conclusion
Employers Health Insurance Financing	ADF	At levels	4.882305	-2.91552	Not Stationary
		1st Difference	-3.588158	-2.933158	Stationary
Health Insurance Uptake	ADF	At levels	2.059356	2.918778	Not Stationary
		1st Difference	-7.886954	-2.933158	Stationary
Log of Individual Health Insurance Financing	ADF	At levels	-0.99371	-3.596616	Not Stationary
		1st Difference	-9.074436	-2.933158	Stationary
Log Per capita Income	ADF	At levels	-0.790396	-2.933158	Not Stationary
		1st Difference	-5.447648	-2.933158	Stationary
Log Social Health Insurance Financing	ADF	At levels	-0.46426	-2.931404	Not Stationary
		1st Difference	-7.322646	-2.933158	Stationary
Government Policy	ADF	At Levels	-3.595261	-2.603944	Stationary

The unit root test results show that, other than the Government Policy series, all other series had unit root at levels. However, all the series were stationary at first difference. The unit root tests concluded that Government Policy series was stationary at level and therefore integrated of order zero: Individual Health Insurance Scheme Financing and Social Health Insurance Scheme Financing had to be logarilized for them to be stationary at first difference. The series, therefore, qualified for ARDL modelling after confirmation of cointegration.

Heteroscedasticity Test

Heteroscedasticity tests were also performed by use of ARCH test and the results presented on Table 4.7. The P-values for observed R-squared are greater than 0.01 and the null hypothesis of homoscedasticity could not be rejected at one

percent level of significance. This implied that the standard errors of the estimates are not biased, and t and f distributions can be used to draw inferences.

Table 4.7: Heteroscedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.226267	Prob. F(23,17)	0.0474
Obs*R-squared	30.78068	Prob. Chi-Square(23)	0.1283
Scaled explained SS	8.549775	Prob. Chi-Square(23)	0.9973

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 11/01/24 Time: 13:03
Sample: 1983 2023
Included observations: 41

Effect of Direct Private Health Insurance Schemes Finance on Health Insurance Uptake in Kenya

The first objective of the study was to determine the effect of employment-based health insurance schemes finance on health insurance uptake in Kenya. This was achieved through the use of Autoregressive Distributed Lag (ARDL) model for long-run and short-run. The results provided in Table 4.10 show that the effect is positive and statistically significant both in the short-run and in the long-run. This means that a percentage point change in direct private health insurance scheme financing will have a transitory and a permanent effect on the level of insurance health uptake in Kenya. A one percentage point increase in individual subscription to health insurance companies in Kenya results to about 3 percent increase in health insurance uptake both in the short-run and in the long-run. This conforms to the study by Bamighausen et al. (2002) with results of a study investigating the determinants of demand for direct private health insurance subscription in Malawi. The study observed that there are heavy potentially important roles that can be played by direct private health insurance financing and that it addresses the affordability factor. Ruger and Kim, (2007) suggests that in countries with already a history of private and voluntary coverage, private health insurance can be developed to reduce the high levels of out -of - pocket expenditure. Kenya already has a history of PHI, and this can be developed further even after the establishment of the universal social insurance.

Direct private health insurance scheme financing makes individuals realize better access to more timely care in health systems where socially and group health insurance financed are plagued by long waiting times for approvals, representing a clear advantage offered to those who purchase health insurance directly (OECD 2004). In particular, direct private health insurance financing enhances access to timely elective care in countries where it has a duplicate function, and private delivery facilities with additional capacity have developed, for example in Ireland, Australia, the United Kingdom, Denmark, Italy, and New Zealand (OECD 2004). It is observed that there is a strong linkage between demands for direct private health insurance financing and waiting times for elective surgery in some of these countries. Uncertainty over the length of waiting times for socially and employer health insurance scheme financed elective treatments and dissatisfaction with public health systems are among the main reasons for advocating for directly private health insurance scheme financing. In addition, it is observed that those who are not in directly private health insurance scheme financing in these countries have a comparatively reduced choice over providers and the timing of health care, unless individuals choose to self-pay for such care (Sekhri and Savedoff 2006). This is a good example for Kenya where public facilities are overcrowded and offer low quality

services. Individuals can benefit from enhanced peace of mind, less anxiety, less pain and better health outcomes when provided with speedier access to care, as afforded by private health insurance in directly private health insurance scheme financing.

Effect of Employment-Based Health Insurance Schemes Finance on Health Insurance Uptake in Kenya

Employment Based Health Insurance Scheme Financing has no immediate significant effect on the Health Insurance Uptake. However, the effect becomes positive and significant as time goes to the future. The effect is significant in the second year. However, this effect fizzles out and the long run effect is statistically insignificant. The findings agree with Mwangangi (2012) who found that employment-based health insurance scheme financing is based on the Employment Act Chapter 226 in Kenya and is expected that employers is to provide quality health care to their employees except where government gives it for free. This makes the financing system not to have significant change on how it influences health insurance uptake. This could arise from the fact that the size of the population in formal employment is low. In addition, most of these schemes are concentrated in urban areas where formal employment is available (Wang'ombe *et al* 1994). Bearing in mind that substantial proportion of the Kenyan population is poor and unemployed with majority in the informal sector and rural agriculture, this study employment-based health insurance scheme financing has no effect on health insurance uptake both in the short-run and in the long-run. The same results are found in Mitullah (2003) who noted that the results are as consequence that individual decision to take up or not take up health insurance is not considered. Similarly, Enthoven and Fuchs 2006 found the same results and noted that employer- provided health insurance is quasi-social insurance.

Effect of Social Health Insurance Scheme Financing on Health Insurance Uptake in Kenya

The third objective of the study was to establish the effect of social health insurance scheme financing on health insurance uptake in Kenya. From Table 4.10 the effect of social health insurance scheme financing is not statistically significant in the short run. However, the effect is positive and statistically significant in the long run. A percentage point increase in social health insurance scheme financing raises the health insurance uptake by 11.6 percent. Under this category, NHIF has dominated due to its mandatory scheme for all formal employees. It is imperative to note that the NHIF benefit packages for different population groups have exclusions and do not fully cover the healthcare costs at the point of use and for the full continuum of care even for disease conditions covered. In a study done by Mwabu and Wang'ombe in 2002, it revealed that only a small percentage of households with NHIF cover used it to pay for medical care. Beneficiaries often do not use the fund, because of the time cost involved. Patients choose to pay in cash rather than spend time at the hospital to fill out the forms that the hospital uses for reimbursement of treatment expenses from the fund. The time-cost involved in using the NHIF exceeds the level of fees at government hospitals and so people prefer to pay cash. Institutional constraints also came out as one of the problems. The probability to use health insurance increases with urban residence and private health institutions and hence it lacks immediate effect on the uptake. The social health insurance scheme financing, despite its weaknesses, is perceived to have a major role to play in the financing of medical care in the country and hence it has a positive and significant long run effect. However, when using NHIF, the government was confronted by the informality problem on strategies to expand coverage among the informal sectors. In an attempt to circumvent the challenge, the government is currently converting NHIF to NSHIF.

The Mediating Role of Government Policy on Health Insurance Scheme Financing and Health Insurance Uptake in Kenya

The moderating Role of Government Policy on Health Insurance Scheme Financing and Health Insurance Uptake in Kenya is negative and statistically significant through the employment-based health insurance scheme financing. However, its coefficient is not statistically significant in the long run. This means that the government policies affect the health insurance uptake significantly in the short run by affecting the employer-based health insurance scheme financing negatively. This effect fizzles out in the long run. On the other hand, the moderating role of government policy through direct private health insurance scheme financing is statistically insignificant in the short run but positive and statistically significant in the long run. When it comes to private health insurance scheme financing, the legal framework covering health insurance schemes financing is found in the 2006 Insurance Amendment. The other laws include the Medical Practitioners and Dentists Act and Chapter 253 of the Laws of Kenya. Before 2006, the Insurance Act had no provisions relating to health insurance schemes financing. At the same time, there was a large number of health insurance schemes financing operating in the private sector whose operations were not regulated by law. The Insurance Amendment Act of 2006 aimed to strengthen the regulatory framework for health insurance financing schemes. The Insurance Regulatory Authority (IRA) was established, and health insurance schemes were required to register with it and meet certain capital requirements. The moderating role of government policy through social health insurance scheme financing is also not significant in the short run but positive and statistically significant in the long run. Government policies on health insurance schemes financing in the country are normally instituted through the health sector and IRA. The policies revolve around the management of financing systems. They are geared toward guaranteeing health availability, accessibility, and affordability to those in need of healthcare.

CONCLUSIONS AND RECOMMENDATIONS

The study concludes that direct private health insurance scheme financing increases financing capacity and supply of finance to the health systems by enabling increasing health insurance uptake. The findings agree that direct private health insurance scheme financing injects financial resources into health systems, which contributes to the financing of health services as observed by OECD (2004). In addition, the mediating role of government policy through direct private health insurance scheme financing is positive and statistically significant in the long run. This means that the underfinanced health system, the move to promoting directly private health financing systems can shift large part of financial burden from the government to private providers. This is a clear indication of how Kenya would shift financial burden from the government to direct private health insurance financing schemes. It heavily plays as the main mechanism for shifting demand away from overburdened public hospitals as highlighted by Hall *et al*. (1999).

Since a percentage point increase in social health insurance scheme financing raises the health insurance uptake by 11.6 percent in the long run, and that government policies statistically affect health insurance uptake significantly through social health insurance scheme financing in the long run, this means that the policy can be instituted to improve uptake from the current below 20 percent of the population. However, it is noted that the decision to purchase coverage in the individual market is different from the decision in the employer-sponsored market. Individuals tend to make economic decisions that are in their own financial and health best interest. In a voluntary individual health insurance market, each purchaser must compare the cost of coverage with the likely value of the benefits that will be received, and thus a consumer's expectations for future health care needs become the primary factor driving the purchase of coverage. This result from the study

estimation proves the existence of a market that operates in a fundamentally different fashion than do the employment-based group market and most social insurance financing programs.

Recommendations

Direct private health insurance scheme financing has been shown to increase service capacity and supply of finances to the health systems by enabling increasing health insurance uptake. Since the government policies are effective in influencing this system of health financing scheme, the move to promoting direct private health financing systems that shifts part of financial burden from the social and employment-based health insurance financing approach needs to be instituted. This is a clear way of shifting financial burden from the employed and tax and instituting some level of equity in health financing system in Kenya. It will also heavily play as the main mechanism for shifting demand away from overburdened and financially stripped public hospitals to all available hospitals. These policies need to be geared to reducing costs associated with direct private health insurance scheme financing and eliminating cases related to adverse selection and moral hazards.

In view of the moderating effect of government policy effectiveness and the fragmented nature of health insurance landscape, the government should institute policy to consolidate different health insurance schemes financing in order to serve different population groups more effectively and equitably in the long run. It should design comprehensive scheme financing and benefit packages within the consolidated scheme with differentiated premiums, allowing individuals to choose the benefit package and premiums within the voluntary health insurance scheme financing.

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