

## **DETERMINANTS OF HEALTH INSURANCE CHOICE IN KENYA**

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### **Abstract**

In Kenya, the out-of-pocket health expenditure by households accounts for around 36 percent of the total expenditure on health. A Large out-of-pocket payment is known to reduce consumption expenditure on other goods and services and thus pushing households into poverty through catastrophic expenditure. Recent studies have shown that health insurance can be used to mitigate impoverishing effects of large out-of-pocket health expenditure. In Kenya, health insurance has limited coverage, yet there are various types of health prepayment schemes. This paper explores the determinants of choice of health insurance schemes in Kenya.

Utilizing the 2008-2009 Kenya Demographic Health Survey (KDHS), a multinomial logit model is estimated. The findings is that wealth index, employment status, education level and household size are important determinants of health insurance ownership and choice. Also, lack of awareness prevents many from enrolling in any form of health insurance scheme.

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**Keywords:** Health insurance, multinomial logit, out-of- pocket health expenditure, utility maximization

### **Introduction**

The majority of the health systems in Sub-Saharan Africa are still heavily reliant on out-of-pocket (OOP) spending. The World Health Organisation reported that in 2007, private expenditure<sup>1</sup> on health accounted for 58 percent of the total health expenditures compared to

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<sup>1</sup> Private expenditure is an aggregation of both out of pocket expenditure and private prepaid plans.

public share of 42 percent. Unlike in high income countries where only 36 percent of the total private health expenditure is from out-of-pocket payments<sup>2</sup>, 83 percent of the total private health expenditures, in this region are paid by households at the time of service (WHO, 2010).

Kenya's out-of-pocket expenditure as a proportion of total expenditure stands at high of 36 percent (The National Health Accounts Statistics, 2005/2006). Public expenditure as a proportion of total health expenditure is 29 percent. Thirty one percent of the total health expenditure comes from the development partners while the private companies contribute 3 percent.

From the foregoing, out-of-pocket (OOP) financing remains a dominant source of health financing in Sub- Sahara Africa, Kenya included. Large out-of-pocket payments are both a burden and a barrier to accessing healthcare (Saksena *et al.*, 2006). Out-of-pocket expenditures especially by poor households often lead to catastrophic<sup>3</sup> expenditures and impoverishment. They also discourage use and reduce coverage of available health care services, both of which are important in improving health outcomes. Evidence from Kenya indicates the negative impact of user fees<sup>4</sup> on utilization of healthcare services (Mwabu *et al.*, 1995; Mbugua *et al.*, 1995; Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009).

To enhance access to health care, health insurance is emerging as the most preferred form of health financing mechanism in countries like in Kenya where private out-of-pocket expenditures on health care are significantly high and cost recovery strategies affect access to healthcare (WHO, 2000). It helps households to set aside financial resources to meet costs of medical care in the event of illness. Pabblo and Schieber (2006) note that health insurance improves risk pooling thus enhancing financial protection among households.

On the other hand, lack of health insurance promotes deferment in seeking care, non-compliance of the treatment regime and results in an overall poor health outcome (Hadley, 2002). The challenge facing developing countries therefore is to shift from OOP financing to pooling of risk arrangements and to ensure effective financial protection and coverage.

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<sup>2</sup> Out-of-pocket health payments refer to the payments made by households at the point they receive health care services.

<sup>3</sup> Health care spending is defined as 'catastrophic' if it exceeds some fraction of household income or total expenditure in a given period, usually one year. There is no consent on its threshold. Past studies used a threshold of between 5% and 20% of total household income. More recent studies have applied a threshold of at least 40% of total household income.

<sup>4</sup> User fees are a form of out OOP payment ((McIntyre, 2007).)

Different health financing policy initiatives have been undertaken in Kenya, all aimed largely at addressing affordability and access to health care services. Immediately after independence, the government abolished user fees and introduced the policy of ‘free health for all’. This policy, dominant in the 1970s and 1980s saw a rapid expansion of the healthcare infrastructure, and improvements in health and social indicators. During this period, health financing system was supported primarily via general tax revenue. With the growing population and worsening socio-economic and political factors, a severe crisis of health and social development unraveled in the 1990s (UNDP, 2002). As a result of the crisis, the government’s objectives and commitments to free healthcare provision for all eroded dramatically forcing it to implement a cost-sharing scheme in 1989. However, user fees were suspended for outpatient care in 1990, stirred by concerns about social justice, only to be re-introduced in 1992 because of budgetary constraints (Collins et al., 1996). In June 2004, the Ministry of Health stipulated that health care at dispensary and health centre level is free for all citizens, except for a minimal registration fee in government primary health facilities.

The need for health insurance in Kenya has been recognized by policymakers for quite some time now, as exemplified by the establishment of National Health Insurance Fund (NHIF) in 1966 through an Act of Parliament. The most significant event in the recent past has been the government’s interest in social health insurance as a health financing mechanism and its possible implementation in Kenya. The aim is to ensure equity and access to healthcare services by all Kenyans.

Health insurance in Kenya can be categorized into two, depending on its membership. Under the statutory health insurance, are the NHIF and the National Social Security Fund (NSSF). NHIF was established by an Act of Parliament in 1966 as a department in the Ministry of Health, which oversaw its operations, but responsible to the government Treasury for fiscal matters. Initially, the Act provided for the enrollment in the NHIF of all salaried persons earning a net salary of Kshs. 1000 per month and above in the formal sector. Over the years, the original Act of Parliament has been reviewed to accommodate the changing health care needs of the Kenyan population, employment and restructuring in the health sector. The NSSF on the other hand, was established in 1965 by the National Social Security Fund Act, Chapter 258. The Fund was intended to serve as the 1st pillar of social security for Kenyan workers. Besides providing financial security, the fund provides members with basic security against contingencies such as employment injury, maternity, illness and/or disability

and death. The fund covers both employees in the formal and informal sector and membership is voluntary.

The Voluntary Health Insurance category, comprise both private where people pay premiums related to the expected cost of providing services and Community Based Health Insurance (CBHI) which is organized at the community level. In the latter form of health insurance, premiums paid by households are generally not based on individual risk assessments unlike in the case of private health insurance.

In spite of the existence of different forms of prepayment schemes in Kenya, all of whose membership have some voluntary component, only about 10 percent of the population has some form of health insurance (Ministry of Medical Services & Ministry of Public Health and Sanitation, 2009). In particular, only 7 percent of women and 11 percent of men aged between 15 and 49 are covered by medical insurance (KNBS, 2010b). This implies that a huge segment of Kenyans are still not covered. Thus, access to health care is largely a function of individual ability to pay for the majority of Kenyans. This accelerates poverty and hence is an important challenge, both for the economic development and attainment of Millennium Development Goals (MDGs).

Considering the aforementioned, a sound understanding of factors determining choice of health insurance is clearly necessary and is thus the main purpose of this study. In particular, this study aimed at identifying the socio-economic factors that influence choice of health insurance schemes among individual Kenyans. We also seek to establish the role of information through awareness on the choice of health insurance schemes in Kenya and finally to analyze the effect of covariate factors on the probability of choosing particular types of health insurance schemes in Kenya.

### **Reviewed literature**

Myriad of factors has been associated with the demand for health insurance policy. This has been dictated by type of health insurance in question. Income has been cited as a key determinant by majority of the reviewed work (Kirigia *et.al*, 2005; Makika *et.al*, 2007; Hopkins and Kidd, 1992; Sanhuez and Ruiz-Tagle,2002; Takuechi *et.al*,1998; Torch and Claudia, 2001; Owando, 2006; Cameroon *et.al* ,1988; Mathuer *et.al* ,2008)

Demographic factors such as age of the head of the household ,sex, living arrangements and marital status of the head of the household has been identified by many researcher as affecting the ownership of health insurance policy (Sanhuez and Ruiz-Tangle, 2002; Guis, 2010; Kirigia *et.al* ,2005; Takeuchi *et.al*, 1998). Apart from gender and age

Torch and Claudia (2001) found expected expenditure in health through their prices and area of residence as key determinants of health insurance ownership. Area of residence was also found to determine ownership of health insurance by Guis (2010) though just like Owando (2006) and Torch and Claudian (2001) he found employment status of the household head to strongly affecting this demand.

Education level was also found to determine demand for health insurance ( Takeuchi *et.al*, 1998; Kirigia *et.al*, 2005; Bourne and Kerr-Campbell,2010; Makoka *et al.*, 2007; Owando, 2006). Owando (2006) found that apart from education attainment level, self-evaluated health status supported demand for health insurance policy.

Risky behavior like smoking, alcohol use and non-use of contraceptives were found to accelerate demand for health insurance by Kirigia *et.al.*,(2005) and Owando (2006). This Risky behavior was associated with one expected health status. Health status was also found to be a significant determinant of ownership of health insurance policy by Hopkins and Kidd (1992), Sanhuez and Ruiz-Tagle ( 2002) and Cameron *et.al.*, (1988).

What is notable in all the above studies reviewed was that they focused on choice of at most two insurance policies while most were binary in nature. This meant that it was not possible to determine the uniqueness of multitudes of factors affecting different health insurance policies in recognition of the fact that different insurance policy are not necessarily determined by the same factors. This paper has adopted a multinomial logit approach with four categories of health insurance policies to try and overcome some of the past assumptions. The paper has used a rich dataset derived from a recent Kenya Demographic Health Survey of 2008/2009 which has renewed past findings that used old dataset

### **Methodology And Data**

The study is based on the theory of expected utility maximization which postulates that individuals will choose between alternatives depending upon which offers the highest total expected utility. In the context of health insurance, there are two possible states of the world: the healthy state where one is not ill and the unfortunate state which can be described as the event of illness or fear of illness serious enough to require an individual or family to pay the full cost of necessary and efficient medical care solely out of current income or wealth. Health insurance can only be utilized in the case of illness. As a result, the utility of any form of health insurance in case of an occurrence of this state (illness) is greater than in the case of well-being.

Individuals choose the insurance that maximizes their expected utility. An individual will, thus, choose a particular insurance type say,  $j$  over another insurance type say,  $k$ , if the expected utility of ( $j$ ) is greater than the expected utility of ( $k$ ). The utility comparison is expressed as:

$$U_{ij} = U_{ij} > U_{ik} \text{ for all } k \neq j \dots\dots\dots(i)$$

Where  $U_{ij}$  is the perceived benefit of ownership of insurance type  $j$  by individual  $i$  while  $U_{ik}$  is the benefit of purchase of insurance type  $k$  by the same individual  $i$ .

**Model Specification**

The decision to buy health insurance is formulated in two interrelated choices. First, the choice is related to the decision to buy or not the health insurance. Second, if the decision to buy health insurance is positive, then one makes a choice amongst the various alternatives of health insurance schemes available. This study concentrated on the latter form of choice.

In this study, multiple outcomes are observed for choice of type of health insurance; (National Health Insurance Fund/ employer based, National Social Security Fund, private health insurance, Community Based Health Insurance or remaining uninsured). Discrete choice models are used in such scenarios where the decisions are made based on various options (Green, 2000; Maddala, 1983).

Multinomial logit model is considered most suitable when a study uses a discrete dependent variable which takes unordered outcomes<sup>5</sup>. This is because it is simple, easy to estimate and interpret and provides cross elasticities (Greene, 2000). We estimate a multinomial logit model (MNL) to examine the socio-economic factors associated with health insurance schemes choice in Kenya. In this model, it is assumed that individuals know all the attributes of each health insurance alternative. They thus choose the alternative that maximizes their utility.

We assume that, for each alternative health insurance scheme  $j$ , head of household (HHH)  $i$  utility function can be expressed in a linear model as follows:

$$U_{ij} = X_i\beta_j + \varepsilon_{ij} \dots\dots\dots(ii)$$

Where,  $i = 1, \dots, n$  heads of households and  $j=0, \dots, j$  alternatives.

$X_i$  represents all the factors (individual or household characteristics) that could affect health insurance choice. The following factors were included: age, gender, marital status,

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<sup>5</sup> We assume that the error term is independent of predictors and has the standard logistic distribution.

employment status, highest level of education attained, size of household, access to information, cigarette smoking status and wealth index.  $\beta_j$  is a vector of parameters associated with the independent variables whereas  $\varepsilon_{ij}$  is the error term.

The probability that j will be chosen is:

$$\begin{aligned}
 p(y_i = j) &= p(U_{ij} > U_{ik}) \forall k \neq j \\
 &= p(\varepsilon_{ik} - \varepsilon_{ij}) \leq x'_{ij}\beta_j - x'_{ik}\beta_k \forall k \neq j \dots\dots\dots(iii)
 \end{aligned}$$

Assuming that the terms  $\varepsilon_{ij}$  are independently and identically standard extreme value distributed then equation (iii) yields a multinomial logit model which takes the form:

$$Prob(y_i = j) = \frac{\exp(x_{ij}\beta_j)}{\sum_{j=0}^j \exp(x_{ik}\beta_j)} \dots\dots\dots(iv)$$

Where  $Y_{ij}$  is the probability of the  $i^{th}$  household choosing outcome j,  $x_i$  is a vector of observations affecting the outcomes,  $\beta_j$  is the coefficient to be estimated and j is the number of alternatives. Household heads (HHH) will be characterized as making one choice among five mutually exclusive outcomes: to purchase National Health Insurance Fund/Health insurance through employer, to purchase National Social Security Fund scheme, to purchase private health insurance, to purchase community based health insurance scheme or remain uninsured.

The choice probabilities are given by estimating log-likelihood for multinomial model (with independent observations) which is of the functional form:

$$Log L = \sum_i \sum_j y_{ij} \log P_{ij} \dots\dots\dots(v)$$

The study utilized secondary data drawn from the 2008-09 Kenya Demographic Health Survey (KDHS). The survey data is a national representative sample survey of 8,071 women aged between 15-99 years and 14,463 men aged between 17 and 98 years of age selected from 400 sample points (clusters) throughout Kenya. Data collection was done from the month of November, 2008 to February, 2009, using the interview method where a questionnaire was administered.

The 2008-2009 KDHS for the first time included questions pertaining to health insurance, besides detailed information on a series of personal characteristics including age, gender, marital status, area of residence, highest level of education attained, access to print

and audio media, wealth index and health related behaviors of each member of the household in addition to the household head characteristics.

## Findings

### Econometric results

Multinomial logit was adopted as the analytical technique with the “uninsured” response as the base outcome, the results of which appear in table 1.4.

**Table 1** Multinomial Logit Parameter Estimates (Absolute z-Statistic in parenthesis)

Variables	Mutual health insurance scheme	NHIF	NSSF	Private Scheme
	Coefficient estimates (Z-statistic in parentheses)			
Age of the household head in years	.0222788 (1.85)	.0278586 (4.75)	.0432073 (4.84)	.0496907 (4.21)
Area of Residence (1=urban, 0=rural)	-.4077704 (1.71)	-.6810813 (6.18)	-.5329659 (3.22)	-.0146245 (0.06)
Household size (number of members)	.0944595 (2.63)	.0636886 (3.38)	.0964773 (3.73)	.0314379 (0.76)
Gender (1=male, 0=female)	-.1242023 (0.62)	-.4114029 (4.44)	-.0740667 (0.51)	.9029793 (3.67)
Awareness (access to media)	-28.66355 (0.64)	.1839111 (3.80)	.3156126 (4.29)	.8672582 (7.98)
Smoking status	-28.66355 (0.00)	-1.241515 (1.19)	-29.91801 (0.00)	.9665184 (1.22)
Employment status	1.3463 (4.21)	.6199323 (5.14)	.5570649 (3.10)	-.5404963 (2.88)
Wealth index	.5930883 (5.56)	.7967485 (13.60)	.6961255 (8.11)	1.183682 (5.69)
Level of education: <i>Primary (educ 1)</i>	18.9315 (27.86)	2.189133 (4.30)	.3714824 (1.01)	1.087127 (1.05)
<i>Secondary (educ 2)</i>	19.93027 (28.08)	3.109718 (6.06)	1.616458 (4.83)	1.434436 (1.38)
<i>Higher (educ 3)</i>	19.77884 (28.28)	4.810729 (9.27)	2.648063 (6.60)	3.115381 (2.98)
Constant	-28.54312	-10.56511 (17.65)	-10.45539 (17.87)	-14.60791 (10.35)
Log likelihood = -4514.4763; Number of obs = 22386; LR chi2(44)=330 Prob > chi2 = 0.0000; Pseudo R2 = 0.2681				

The effect of education is phenomenal in favor of mutual schemes. Assuming all other things held constant, a respondents with primary, secondary and tertiary education attainment have  $exp(18.9)$ ,  $exp(19.9)$ ,  $exp(19.7)$  respective higher odds of choosing mutual or community insurance above those with no education. An additional member into the household increases the odds by .09, males have a  $exp(-0.124)$ = 1.1 times less relative risk of choosing community insurance over females. Higher media publicity of insurance reduces the odds of choosing mutual insurance; a level rise in wealth index increases the odds by 0.59 while employed HH heads have  $exp(0.135)$ = 1.1 better odds of choosing mutual over no-insurance compared to the unemployed. As a result, mutual schemes could be considered as a

normal good. Finally, smoking cigarettes<sup>6</sup> contribute  $\exp(-28.66)=0.0$  or zero change in odds of choosing mutual/ community based cover.

Interpreting coefficients of choice of NHIF cover, we find that, *ceteris paribus*, a respondents with primary, secondary and tertiary education attainment have  $\exp(2.18)=8.8$ ,  $\exp(3.11)=22.2$ ,  $\exp(4.81)=122$  respective better odds of choosing NHIF scheme than those with no education. An additional member into the household increases the odds by 0.064; males have a  $\exp(.4114)= 0.7$  less odds of taking up employer schemes. Age of HH heads and awareness of insurance products increases chances of choosing NHIF with an extra year contributing 1.0 and awareness 1.2 to the odds; Smoking reduces odds of choosing NHIF by  $\exp(-1.24)=0.3$  times; wealth index is more important positive determinant here than for choosing mutual security. Employees are twice likely [ $\exp(.62)=1.9$ ] to choose employer based cover than their unemployed colleagues. This is not a surprising observation since those employed in the formal sector must enroll in this scheme due to statutory requirements.

Compared to lack of education, *ceteris paribus*, primary level, secondary level and tertiary levels have  $\exp(.37)=1.5$ ,  $\exp(1.6)=5$  and  $\exp(2.6)=14$  times higher chances of taking up social security. If everything else were assumed unchanged, addition of one more member into a household increases their relative risk ratio of choosing NSSF by .096 units, males have a  $\exp(-.074)= 0.9$  less odds of choosing social security. An extra year in age contributes .043 to the odds of choosing social security cover. More frequent access to insurance information via media has 0.315 higher odds of choosing social security while smoking reduces the odds. Those in higher wealth index have 0.7 higher odds whereas the employed have higher odds  $\exp(0.557)=1.7$  of choosing social security, *ceteris paribus*.

In the case of private health or commercial insurance scheme, attaining primary level, secondary level and tertiary level of education increases chances of taking up private health insurance by  $\exp(1.09)=3.0$ ,  $\exp(1.43)=4.2$  and  $\exp(3.1)=22.5$  times, *ceteris paribus*. Unlike in the other forms of health insurance schemes, males have a higher relative risk ratio of  $\exp(0.90)=2.5$  times of choosing private health insurance. A year extra increase in age increases chances of choosing private/commercial insurance by 0.049 units. A level increase in awareness raises the odds by 0.87 whereas a level rise in wealth index increases the odds by 1.18 units. Smoking status increases the chances of choosing private schemes by 2.7 times; rural residents are least likely to choose this scheme and employment decreases

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<sup>6</sup> This study used smoking cigarettes as a proxy for consumers' attitudes towards health risk.

probability of taking private cover (being employed has 0.5 times less contribution to choice of private scheme than being unemployed).

## **Discussion of Results**

### **Age**

The effect of age on demand for health insurance is positive across all forms of health insurance schemes indicating that purchase of health insurance relative to being uninsured increases with age. Economic theory predicts that stock of health depreciates at a decreasing rate with increase in age. Older individuals thus tend to increase their investments in health (health insurance included) in order to decrease the rate of health depreciation. This could be confounded by other variables such as education and income which are likely to increase with age. The results are similar to those by Kirigia *et al.* (2005) in South Africa, Bhat and Jain (2006) in Gujarat, Gius (2010) in the US and Owando (2006) in Kenya among others. But we find some relative difference in that older people are more likely to choose NSSF (which is statutory) and private schemes (which they can afford in agreement with life-cycle hypothesis). We also note that the age variable is not statistically significant for mutual health insurance scheme.

### **Gender**

Gender has a significant bearing on choice of insurance schemes. To begin with, males form the majority of respondent without cover, indicating that males are risk takers. The coefficient on gender dummy is negative and statistically significant in mutual, NHIF and NSSF suggesting that being male decreases the likelihood of insuring oneself relative to no insurance. It is hypothesized that females especially at the reproductive age demand more medical services and are hence more likely to purchase insurance cover more than men. Indeed a decade ago, the study by Bourne and Kerr-Campbell (2010) in Jamaica determined that health insurance coverage is partly a function of the number of males in a household. And choice of insurance schemes discriminates against gender with males preferring private options whereas females have preference for mutual/community and employer-based schemes. Mutual schemes are based on trust and it connotes that this aspect plays a role in determining female choice of health insurance cover.

### **Access to media**

Higher media publicity of insurance reduces the odds of choosing mutual insurance – mutual schemes do not need any media marketing since they are mainly local social security/self help groups formed by friends or family. The results are however statistically insignificant ( $p$ -value=0.521). Access to information was a significant determinant for choice

of NHIF, NSSF and private health insurance. These findings are not surprising since, Nketiah-Amponsah (2009) in Ghana and Bhat and Jain (2006) in Gujarat realized that awareness and knowledge about health insurance were significant determinants of health insurance coverage. Similarly, the study by Mathuer *et al.*, (2008) on demand for Social Health Insurance of informal sector workers in Kenya established that lack of information was a major barrier to enrolment. Access to information therefore becomes a vital component of increasing uptake of health insurance cover.

### **Wealth index, Income and Employment Status**

Wealth index variable has the expected sign and is statistically significant. The current work reveals that those in the poorest wealth index are less likely to take health insurance. A rise in wealth index significantly increases the odds of choosing all the four types of insurance scheme. This is an indication that health insurance is a normal good. We also notice that wealthier people will choose private schemes more than any other option. The findings concur with those by Bourne and Kerr-Campbell (2010). Employed people are more likely to be covered by mutual and NHIF than private and NSSF. Obviously, employees are twice likely to choose employer based cover than their unemployed colleagues which is because employers are mandated to insure their workers.

### **Education**

As expected, education increases the probability of taking up insurance of all types with more educated individuals intending to insure. The results are in line with the hypothesis that educated people have the ability to not only to acquire skills and knowledge but also to make informed choices on health related matters among them purchase of health insurance to avoid catastrophic health expenditures. This important role played by education is well documented by Grossman (1972). Similar results were obtained by Kirigia *et al.*, 2005; Kidd and Hopkins, 1996; Nketiah-Amponsah, 2009 and Bourne and Kerr-Campbell, 2010 among others. The results however indicate that education is most responsive in mutual schemes. Also, we realize that individuals taking up private insurance belong to the highest wealth index, are relatively older with a higher awareness and the highest education level than the rest. Individuals taking up mutual community schemes belong to the lowest education level than the rest.

### **Household size**

The study established that larger sized households associate more with NSSF and mutual fund schemes whereas smaller households associate with private schemes in agreement with previous works. For instance, Bhat and Jain (2006) who studied factors

which affect the decision to purchase insurance as well as the amount of health insurance bought in micro health insurance scheme settings of Gujarat found the number of children to be an important determinant. The findings however differ from those of *Kirigia et al.*, (2005).

### **Residence**

Rural residents are more likely to be in mutual and statutory schemes. Kenyan villages have more tendencies for residents to come together in social self help groups which explain their preference for mutual cover. Concerning statutory cover, NHIF has in last 5 years done aggressive marketing in the villages which has increased coverage there. Urban residents are most likely to be in private health cover, perhaps because they can afford it. Residence has been found to determine choice of health insurance by previous works; see Hopkins and Kidd (1992) and Torch and Claudia (2001) in Chile, for example.

### **Smoking habit**

Across all the insurance schemes, smokers are found less likely to take cover than non smokers, with private schemes taking the bulk of their cover (although statistically insignificant). It is likely that either they hide this habit from insurers (information asymmetry), are risk takers and therefore less likely to take up insurance cover or they are able to finance this risky health habit since we notice that private insurance scheme has people in the richest wealth index most of whom are in informal sectors. Smoking variable may be viewed as proxy for expected health consumption in which case, a positive coefficient parameter suggests presence of moral hazard (*Kirigia et al.*, 2005 and Owando, 2006). On the other hand, it may be seen as a proxy for risk aversion as is the case with this paper. Our results echo those of Kidd and Hopkins (1996) who interpret the negative coefficient as evidence that less risk adverse individuals are less likely to purchase health insurance cover.

### **Policy Recommendation**

Findings after profiling respondents by insurance schemes have several pointers. First, the most important factors to target when designing policy instruments for health insurance uptake in Kenya are: size of household, wealth index, education/awareness and employment. To increase uptake of the insurance scheme will require policies that facilitate schooling and a raise in the living standards of Kenyans.

Secondly, individuals without insurance cover are found at a youthful age bearing the lowest education attainment, are smokers with relatively low employment status but, worst of all, have the lowest wealth index (poorest). There is need to initiate strategies that promote employment among the youth or create opportunities for them to procure income generation.

From the study, lack of awareness on the various forms of health insurance negatively affects the decision on health insurance coverage. Building awareness about health insurance coverage is vital. There is need to increase awareness levels on risk protection and risk reduction for risk takers (male and smokers) - media, ministry, scheme providers' adverts and social marketing activities become helpful.

Other than concentrating on Social Health Insurance only, the government should also focus on developing other forms of health insurance. For instance, focus should be placed to ensure more private sector participation in provision of health insurance. But this should also be coupled with enhancing competitive behavior to encourage development of inventive and affordable insurance policy covers. Different policies and channels of promotion of insurance uptake are required for rural and urban areas.

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