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The Role of Information Asymmetry and Uptake of Insurance Products in Kenya

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Abstract: ***The Insurance Regulatory Authority in Kenya report indicated that lack of right information showed that individuals were vulnerable to information asymmetry in insurance contracts and limited in making insurance choices. The aim of this study was to assess the relationship between information asymmetries and uptake of insurance products in Kenya. Objectives of the study were: to analyze the relationship between moral hazard and uptake of insurance products and to evaluate the relationship between adverse selection and uptake of insurance products in Kenya. Validity in the study was determined using expert opinions while reliability of instruments was determined by computing the Cronbach reliability coefficient from pilot questionnaires. Data analysis was done using descriptive and inferential statistics. Hypothesis testing was done. The tests were done at a significance level of P= 0.05. The study found out that adverse selection and moral hazards significantly influenced insurance uptake.***

Keywords: Information asymmetry, moral hazard, adverse selection, insurance uptake, Kenya

1. Introduction

One of the items that conducted to various discussions regarding the insurance market functioning is information asymmetry. Approaching the importance of information asymmetry in the insurance field, Hubbard (1990) asserted that it has the potential to cause market failures and create inefficiency both at micro and macro levels. The problems created by asymmetry information in insurance field have an impact in pricing, contract design and regulation (Kau, Keenan, Lyubinov & Slawson, 2012).

Literature on information asymmetry consequences in the insurance sector comprises the theoretical developments of the asymmetry information theory since it was first elaborated by Akerlof in year 1970. The two important items included in this segment form the basis this study concern, which is moral hazard and adverse selection. These informational problems have the potential to lead to the lack of understanding of the markets (Chiappori & Salanie, 2000).

Asymmetric information presents a fundamental problem in most insurance markets. It has been established that policyholders are heterogeneous in risk and this risk level is private or hidden information that is important for the contract, but unobservable to the insurer. According to Bolton and Dewatripont (2005) information asymmetry results in a situation where high-risk individuals are associated with extensive insurance coverage. This shows a positive correlation between ex post risk and extensive coverage. Several studies, both theoretical and empirical, have also suggested the possibility favorable selection which this study intents to investigate. These individuals have a high demand for insurance and are good risks ex post, and this selection predicts a negative correlation between insurance coverage and ex post risk occurrence (Fang, Keane & Silverman, 2008).

The Kenyan insurance industry comprises a number of players including insurance companies, reinsurance companies, intermediaries such as insurance brokers and insurance agents, risk managers or loss adjusters and other service providers (Makove, 2011). The industry is regulated under insurance Act; Laws of Kenya, Chapter 487. The industry also comprises of the self-regulation Association of Kenya Insurers (AKI) established in 1987 as a consultative and advisory body to insurance companies and registered under the Society Act Cap 108 of Kenyan law

According to IRA (2013) report, there were 47 insurance companies comprising of 10 long-term business insurers, 21 general business insurers, 16 composite insurers and 3 re-insurance companies. The market also comprised 161 licensed insurance brokers, 24 Medical Insurance Providers (MIPs), 3931 insurance agents and 2 locally incorporated re-insurers. In 2015, IRA revealed a continued growth in the insurance industry with insurance premiums amounting to 88 billion up from 76 billion in 2014.

2. Problem Statement

Various studies of the automobile, health, and life insurance markets conclude that asymmetric information may not exist in these insurance markets (Chiappori & Salanie, 2000; Cardon & Hendel, 2001; and Cawley & Philipson, 1999). Despite these studies, predictions by many moral hazard and adverse selection models show no evidence that individual with more of these types of insurance are more likely to experience the insured risk (Spindler, 2012). However, in Kenya's insurance market a majority of the inhibitors of insurance uptake are anchored on informational challenges. The insurance sector in Kenya has been growing very fast over the past years. However, the fast has not been matching penetration rates which remain low, at just 3% of GDP in 2013 and 2014. IRA (2015) revealed that potential insurance markets in Kenya have had no sufficient information on insurance to enable them purchase. Further insurance were faced with the risk of fraudulent claims amounting to 35% of the claims settled in a year due to poor information flows across the industry. These are clear indicators of information asymmetries between insurers and insurance companies. This study, therefore, sought to assess the role and or the

relationship between information asymmetry and insurance uptake in Kenya.

Research Objectives

The main objective of the study was to assess the relationship between information asymmetries and uptake of insurance products in Kenya.
Specific objectives were:
1) To analyze the relationship between moral hazard and uptake of insurance products in Kenya.
2) To evaluate the relationship between adverse selection and uptake of insurance products in Kenya.

Research Hypotheses
H_0: There is no significant relationship between moral hazard and uptake of insurance products in Kenya.
H_0: There is no significant relationship between adverse selection and uptake of insurance products in Kenya.

Theoretical Literature
This study was guided by three theories governing the information exchange in the insurance industry: Information Asymmetry Theory, Signalling Theory and Agency Theory.

Information Asymmetry Theory

The concept of asymmetric information was first introduced by (Akerlof, 1970). In the paper, Akerlof developed asymmetric information with the example case of automobile market. Asymmetric information refers to situations in which some agent in a trade possesses information while other agents involved in the same trade do not. The asymmetric information perspective highlights that "information is imperfect, obtaining information can be costly, and there are important asymmetries of information" (Stiglitz, 2000). Information asymmetry occurs when the knowledge of one contracting party is inferior to that of the other party regarding the counterparty's true intentions and planned activities or the quality of exchanged goods (Mas-Colell, Whinston &Green, 1995). In insurance contract, information asymmetry would arise where one party in the contract has information or plans activities that are not knowledgeable to the other party.

Asymmetric information theory is an intuitive model of market behavior. Information asymmetry in an insurance contract would result to adverse selection or moral hazard although these do not always happen. Under specific conditions favorable selection may take place. Since the party with relatively poor information draws a selection with relatively less attractive characteristics.

In a case where information asymmetry occurs after an agreement is obtained between individuals is called moral hazard (Mirrlees, 1999). The framework often used to analyze moral hazard situations is the principal-agent problem. Once the contract has been signed, the agent can either take an action that is non-observable for the principal that is; hidden action. Alternatively he can obtain information about some characteristics of the environment that the principal cannot acquire that is hidden information. As opposed to the case in which agents were offered a menu of contracts, moral hazard situations imply that every agent is given the same contract; the contract must therefore take into account future information asymmetries, and hence address the incentives problem (Grossman & Hart, 1983).

Signaling Theory

The Signaling theory was originally developed by (Spence, 1973) to clarify the information asymmetry in the labor market. It has been used to explain voluntary disclosure in corporate reporting. Signalling refers to any activity by a party whose purpose is to influence the perception and thereby the actions of other parties. This presupposes that one market participant holds private information that for some reason cannot be verifiably disclosed, and which aspects the other participants. Signaling theory explains why firms have an incentive to report information voluntarily to the capital market. Voluntary disclosure is necessary in order for firms to compete successfully in the market for risk capital. Thorne, Mahoney and Manetti, (2014) argue that Insiders know more about a company and its future prospects than investors do; therefore, investors will protect themselves by offering a lower price for the company. The value of the company can therefore be increased if the firm voluntarily reports that is signals private information about itself that is credible and reduces outsider uncertainty (Connelly, Certo, Ireland & Reutzel, 2011).

Hasseldine, Salama and Toms, (2005) in their works to advance signaling theory integrated quality-signaling theory and the resource based view of the firm to test the differential effects of the quantity and quality of environmental disclosures on the firm's environmental reputation. Thorne et al., (2014) suggest that quality of CSR disclosure rather than mere quantity has a stronger effect on the creation of environmental reputation amongst executive and investor stakeholder groups. In the current study, signaling theory can be used to explain information asymmetry and disclosure between insured and the insurance companies. Although there are some information that is not disclosed during the contracts some of the signals sent by the clients may be used by the insurance company to deduce information about the clients attributes therefore being part of client appraisal. On the other hand, the clients may get signals from other sources such as customer complaints, the media among others that imply the insurance company's claims settlement patterns. This may influence the clients behavior towards the uptake of insurance or not.

Agency Theory
Theory of Agency was originally developed by Ross in and Mitnick, independently and roughly concurrently in 1972. An agency relationship arises where one or more parties called the principal contracts/ hires another called an agent to perform on his behalf some services and then delegates decision making authority to that hired party (Agent).

In economic agency, the problem is one of selecting a compensation system that will produce behavior by the agent consistent with the principal's preferences. Thus, the focus is on the nature of the incentive system and the contracting system that guides the distribution of those

incentives, as well as the conditions of risk and information that condition the choices of the actors (Mitnick, 2006).

Further the agency theory was developed by Logan (2000) who grounded his theory on the separation of the ownership and control of economic activities between the agent and the principal the theory held that various agency problems which may be born included but not limited to the following: asymmetric information between the principal and the agent character based on self-interest, differences in risk aversion and outcome uncertainty.

According to Bebchuk and Fried, (2004)principal–agent problem occurs when one person or entity "agent" is able to make decisions on behalf of, or that impact, another person or entity “the principal". The dilemma exists because sometimes the agent is motivated to act in his own best interests rather than those of the principal. The agent-principal relationship is a useful analytic tool in political science and economics, but may also apply to other areas.

According to Logan (2000) the most efficient contract includes the right mix of behavioral and outcome-based incentives whose alignment is an important issue in insurance agency to motivate the agent to act in the interests of the principal. The principal-agent problem may also create incentives for insurance brokers to encourage households to take on insurance policy they cannot afford or to commit fraud by false information on insured policy applications in order to qualify them for their policy summarizing this problem was regulation e.g the originators, who were not allowed to disclose information to the insured that would have helped them to check whether they could afford the policy. In view of the above, the increased complexity of structured insurance products destroy information, thereby making a systematic information worse in the insurance system and increasing the severity of adverse selection and moral hazard problems.

Majority of insurance companies distribute their products through intermediaries such as agents and brokers who come into contact with the customers. These agencies work in interest of their organizations and also that of the insurance provider. However many at times they are subject to information asymmetries between the clients and the agency and between the client and the insurance provider. Distribution of insurance products through agents could be one of the main causes of low penetration due to the consequences of adverse selection and moral hazard by the agent.

3. Empirical Literature

A number of studies have been conducted assessing information asymmetries, moral hazard, and adverse selection in insurance organizations. This section explored such studies and the link of insurance uptake across different regions.

Asymmetric Information and uptake of insurance products

Research has emphasized the potential importance of asymmetric information in impairing the functioning of insurance markets. The empirical relevance, however, remains the subject of considerable debate. A number of studies of the automobile, health, and life insurance markets in different parts of the world have concluded that asymmetric information does not exist in these insurance markets (Chiappori & Salanie, 2000; Cardon & Hendel, 2001; and Cawley & Philipson, 1999).

The above studies were however based on the same widely used test of asymmetric information. They tested for whether there is a positive correlation between insurance coverage and risk occurrence. Contrary to the predictions of many moral hazard and adverse selection models, these papers find no evidence that individuals with more insurance are more likely to experience the insured risk.

According to Chiappori and Salanie (2000) data from insurers are well suited for studies of asymmetric information, because they record choice of coverage and outcome (claim or not), as well as many characteristics of policyholders. Finkelstein and Poterba, (2004) held that studies using data from different insurance markets had evidence of insurance coverage risk correlation yet, tests on property/liability insurance, where automobile insurance data did not reveal any strong evidence of information asymmetries that affect the level of risk in the contract (Chiappori & Salanie, 2000).

The work by Dionne (2001) suggested that insurers’ information set is sufficient if non-linear effects, not considered by Puelz and Snow, are taken into account. A sufficient risk classification implies that there is no residual adverse selection in each risk class, since groups are homogeneous in risk. To overcome previous difficulties with estimation, Chiappori and Salanie (2000) held that there is need to introduce a simple and general test of the presence of asymmetric information. When this test was applied to a homogeneous sample of inexperienced drivers in the French automobile insurance market, no significant correlation was found.

In the study by Finkelstein and McGarry (2006) they considered the policyholder’s private information on risk in the long-term medical care insurance market. Their findings indicate that two types of individuals buy insurance: Those with private beliefs that they are high risks and those with a strong taste for insurance. Ex post, the former are a higher risk and the latter a lower risk to the insurer. They conclude that, in aggregate, individuals with more insurance are not higher risks, and that an equilibrium with multiple forms of private information is unlikely to be efficient.

Moral Hazard and uptake of insurance products

Moral hazard is a post-contract information asymmetry where one party's action affects the other's payoff. In their study Rubinstein and Yaari (1983) found that, moral hazard is an economic interaction involving imperfect observability.

They recognized that an insurer cannot observe certain actions taken by the insured, actions which, however, have an effect upon the insurer's payoff. This inability of the insurer to observe the actions of the insured creates an incentive for the insured, once insurance is purchased to act in a manner that is liable to enhance the likelihood of a large claim being filed. As a result, the scope for a mutually advantageous interaction becomes severely hampered and, in particular, fully efficient interaction becomes impossible because efficient contracts are not enforceable. If interaction takes the form of an isolated contract, then any attempt to correct the inefficiency caused by moral hazard must take place through the specification of what rewards or penalties the insured person would incur for any given level of the commonly observable variables

A considerable body of literature has investigated the incidence of moral hazard in insurance. Autor and Duggan (2003) have related the strong increases in the number of people on the disability insurance rolls and the associated expenditures in the US during the 1990s and 2000s to lenient medical screening. A number of studies have shown that higher replacement rates and easier access to benefits reduce the propensity to work (Gruber 2000; Autor & Duggan 2003; Autor, Duggan & Gruber 2012), and that individuals out of the labor market tend to overstate work limitations (Kreider, 1999), this amounts to moral hazards in quest for higher compensation rates.

Moral hazard in disability insurance arises from the information asymmetry regarding claimants' true health status. Applicants may overstate health limitations if the disutility of working is large and benefit receipt is an attractive alternative (Kreider, 1999).The relevance of moral hazard is also confirmed by the fact that incidence is only reduced for those conditions which are difficult to verify and thus most likely to be affected (Liebert, 2014).

A study by Keane and Stavrunovay (2014) to assess adverse selection, moral hazard and the Demand for Medigap Insurance in the UK revealed that moral hazard effect was substantial. The study revealed that individuals with Medigap insurance spent about $1,615 more on health care on average than similar individuals without Medigap $6,789 vs $8,404 which implied a 24% increase. As a result of the moral hazard effect, a policy of expanding Medigap coverage to all would be even more costly.

Einav, Finkelstein, Ryan, Schrimpf and Culleny, (2011) explored the existence, nature and implications of selection on moral hazard empirically in the context of the employer-provided market for health insurance in the United States. The study estimate substantial heterogeneity in moral hazard and selection on it, with individuals who have a greater behavioral response to the contract demanding more coverage. They estimated that moral hazard type is roughly as important as health expectations in determining whether to buy a higher or lower deductible. In other words, selection based on the expected slope of spending appeared about as quantitatively important in the setting as traditional selection based on the expected level of spending. This implies that argued differently, moral hazard was a driver towards insurance uptake or the uptake increased moral hazard.

Moral hazard has been key driver in insurance fraud. According to Busch (2008) fraud and abuse of private healthcare benefits has three perpetrators. Fraud can take place when an individual patient perpetuates a fraud scheme against his or her own health plan, also called beneficiary fraud when the treatment providers and medical equipment vendors act on their own by using to their advantage a benefits plan, also known as provider fraud, and when there is collusion between the providers and patients, which essentially is a combination of provider and beneficiary fraud, but which opens the door to whole new sets of possible schemes to defraud the insurer. One of the greatest challenges for the insurer is to properly identify and prove whether or not the plan member is involved in the fraudulent or abusive scheme.

According to Parkin, Bray and Devesa,(2000) health insurance markets have the problems of moral hazard and adverse selection. Moral hazard is the tendency for people who are covered by health insurance to use more health service or to be less careful about avoiding health risks than they otherwise could. It can thus be deduced that people get insured because they want to avoid shouldering such risks. On the same note Parkin et al (2000) argue that because of adverse selection in the insurance market, those people who know they have a greater chance of falling ill than the average, are the ones more likely to buy health insurance. Insurance companies are thus expected to attract profitable business from low risk customers as they tend to give preference to healthy and employed people. It is thus normal to find that at times some people are not covered because of the extent of risk regarding their health status or because of their payment abilities.

The issue of health risks as a determinant to health insurance participation is underlined by Morris, Devlin and Porklin,(2007). They held that the role of health insurance in addressing uncertainty in the demand for healthcare depends on attitude to risk. They maintained that an individual would pay for insurance as long as the utility it yields was at least as high as the utility they would achieve if they did not buy insurance. They see health insurance as a vehicle to remove uncertainty facing individuals with respect to the timing and magnitude of healthcare expenditure.

In a study by Ndungu (2013) assessing factors affecting profitability of private health insurance in Kenya, he found out that there was some form of fraud experienced at Heritage health division and the common one was the member fraud where an insured person claims for compensation falsely. Maxwell (2008) also confirmed that this was the most common type of fraud where the plan members exaggerated illness to collect additional health benefits or where the member share the medical cards with non-members. Leibowitz (2004) found that health insurance induces 'moral hazard' and leads an individual to consume more health care that the patient values less than the cost of producing it.

Adverse Selection and uptake of insurance products

The concept of adverse selection refers to situations where, before the contract is signed, one party (in general the insured agent) has an information advantage upon the other. In most models, it is assumed that clients know better their own risk than insurance companies; the latter may then use deductible as a way of separating individuals with different riskiness.

According to Rotschild and Stiglitz (1976), adverse selection is a general problem in the insurance context. It describes a state in which a disproportionate share of people from the scheme's total target group are insured who are relatively more likely to fall ill/injured and needs more care compared to their uninsured counterparts. Rational behavior induces relatively healthy (and risk-neutral) individuals not to insure if the insurance premium is higher than their expected health costs. Since insurance premiums are generally based on an actuarially fair level calculated over the total target group (plus an additional top-up for the operational costs of the insurance company), healthy people have less incentives to insure. This type of adverse selection, which we call 'Type I', could lead to a high-risk pool, in which collected premiums are not sufficient to cover the expense accounts. The sustainability of insurance schemes are at stake if premiums are not adjusted accordingly. A higher premium however, will drive out enrollees that need relatively less medical treatment, creating a vicious circle.

In the expected utility theory, people choose to insure if expected utility under the scheme is larger than expected utility without being enrolled into the scheme (Lammers & Warmerdam, 2010). Next to the price, the expected utility of the scheme is formed by risk preference and believes over future health costs depending on valuations of own health, and health risks. The demand for health insurance arises from individuals who prefer certainty or wealth security to uncertainty and risk. Adverse selection, taking place in the context of uncertainty, arises from asymmetric information, where the principal knows his risk profile and the insurer does not. Adverse selection can be counterbalanced by enhancing enrollment among more risk-averse types who behave more cautiously compared to less risk averse types.

A study by Lammers and Warmerdam (2010) to assess adverse selection in voluntary micro health insurance in Nigeria revealed that, adverse selection problems were expected to be larger when enrollment into an insurance scheme was low like is often the case in the beginning of new programs. If enrollment rates increased, the impact of adverse selection would go down. To increase risk pools, mandatory instead of voluntary insurance was frequently used in Western countries. However, this situation would not apply in developing countries since if the premiums are highly subsidized, without adequate knowledge on consumption possibilities of the poorest, obliging them to enroll in a pre-payment health system is not a desirable option.

Chiappori and Salanie (2000) state that it is possible the adverse selection cannot be present in some insurance markets. Furthermore, if we assume that the insurance companies are better informed about the insurant risk, and then the former are better informed about the risk. Based on this, Villeneuve (2000) proposed an analysis of better informed insurants that will study the way in which the information is transmitted.

Wolfe and Goddeeries (1991) studied the demand of a certain type of life medical insurance, Medigat and discovered a very weak presence of adverse selection. Pueltz and Snow (1994) tested the same this in the US car insurance market and they discovered that the agents with a large risk loving coefficient choose the insurance with a larger coverage, which is consistent to the adverse selection. Godfried (2001) studied the dental insurance demand in Holland, which was included in the standard medical insurance package in 1995. The conclusion was that the agents with a large inclination toward risk tend to buy a supplementary dental insurance.

According to Wang, Zhang, Yip and Hsiao, (2006) evidence from the voluntary Rural Mutual Health Care scheme in poor rural China indicates that adverse selection can be substantial even when uptake is high. They found adverse selection by self-reported severity of recent illness in a sample with an enrollment rate of 71%. Adverse selection mainly occurred among partially enrolled households. Zhang and Wang (2008) showed that the adverse selection effects did not change significantly over time. Arhin (1994) based on a comparison of illness episodes among scheme and non-scheme members in the national health insurance scheme in Burundi adverse selection did not appear to be a major problem. However, non scheme members often bought the insurance just before seeking care. Moreover, high-risk families and larger families were more likely to join due to a fixed family price for the package.

Dror, Soriano, Lorenzo, Sarol, Jr, Azcuma and Koren, (2005) compared morbidities between insured and uninsured in their target population and found no evidence of adverse selection in a scheme in the Philippines. They did find a larger share of hospitalized and diagnosed chronically ill among the insured group, which they explain by the increased access to care via the insurance. Adverse selection issues have also been analyzed using willingness-to-pay (WTP) analyzes. Dror, Radermacher and Koren, (2007) showed that households that experienced high-cost health events displayed a higher WTP for micro health insurance in India. Contrary, based on actual biomedical indicators, such as weight loss, Gustafsson-Wright, Asfaw and Van der Gaag, (2009) did not find a significant positive influence of poor health on the willingness-to-join (WTJ) nor the WTP for a hypothetical health insurance in Namibia. While a number of the above mentioned studies have analyzed adverse selection using statistical models, none of these studies were correct for risk preferences and risk perceptions which might have biased the results.

4. Conceptual Framework

The study was guided by the conceptual framework on Figure 1

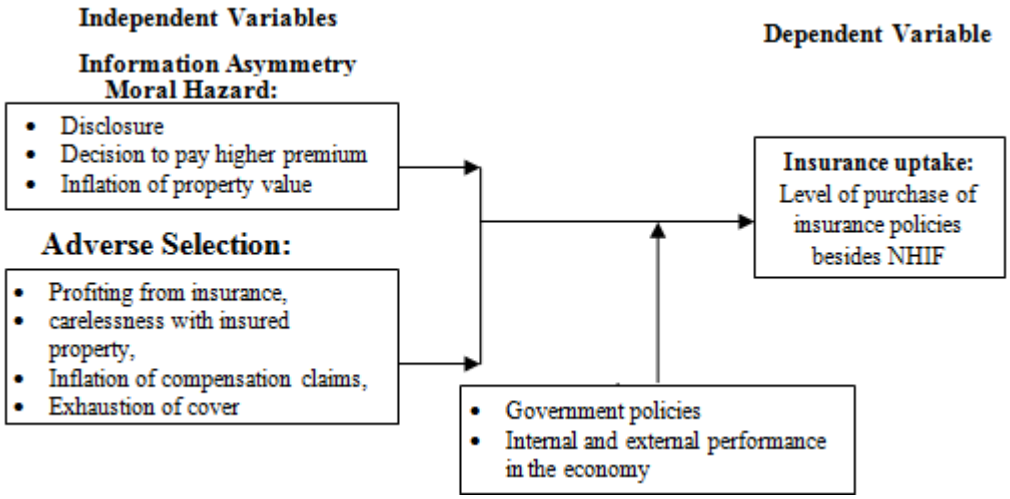

Figure 1: Conceptual Framework

Source: Author (2016)

The relationship highlighted in the conceptual framework on Figure 1 shows that information asymmetry affects insurance uptake. In the study, information asymmetry was conceptualized in the following perspectives: the information disclosure between insured parties and the insurance assessed in terms of the adverse selection and moral hazard by the insured parties. Adverse selection occurs due to information asymmetry before entering into insurance contract while moral hazard occurs as a result of information asymmetry after entering into insurance contract.

5. Research Methodology

The study was conducted using the explanatory research design because it helped to generate tentative explanations or hypotheses. The target population in this study was made up of all the teachers in public primary schools in Nakuru Sub-County. Teachers were preferred for this study because they were in an industry that would give a homogenous population for study. The sampling frame was drawn from the list of public primary school teachers in Nakuru Sub-County obtained from the Nakuru Sub-County education office and the Nakuru Sub-County TSC Staffing Office. In total, there were 1124 public primary school teachers in 59 public primary schools in the Sub-County. A sample of 92 teachers was used, selected using stratified random sampling technique. The strata were based on the four Zones: in Eastern zone 25 teachers were selected, Western 22, Northern 23 and Southern 92 teachers.

Primary data was collected using questionnaires. The questionnaires were developed and administered to the selected teachers especially the heads teachers and deputy head teachers. Questionnaires elicited information from the public point of view on their level of awareness in relation to uptake of insurance products. Questionnaires were administered to teachers using the drop and pick method where teachers were allowed one to three days to complete. Quantitative data analysis was done using multiple response analysis techniques, mean, mode, standard deviation, percentages and frequencies.

6. Results and Discussions

Insurance Uptake

From the findings, it was revealed that 73.6% of the school managers have purchased insurance cover before besides the mandatory NHIF. Basing on the previous purchase of insurance cover it was established it can be concluded that uptake was very high among school heads compared to the general uptake of 2% within Nakuru County (IRA, 2015) and 3.0% nationally. Out of the 64 school managers who had acquired insurance, 89.1% did so voluntarily while for 10.9% it was a requirement by other parties but not out of their own wish.64.1% of the school heads who had purchased insurance policies before indicated that they would not like to acquire insurance in the future.Majority of the school heads who had insurance policies before also owned cars (70.3%) while majority of those who did not have policies did not own cars. This implies that ownership of motor vehicles was associated with insurance uptake. Majority of public primary school heads who owned properties also had insurance policies (76.6%). However, 56.5% of those who were not insured also owned properties. This implies that ownership of properties was not a key determinant of insurance uptake.

Moral Hazards in the uptake of the insurance products

The first objective of the study was meant to assess the moral hazard among primary school teachers and its relationship with insurance uptake among teachers. Moral hazard was associated with the behavior after contract as held by Rubinstein and Yaari (1983) in their study which found out that an insurer cannot observe certain actions taken by the insured, actions which, however, have an effect upon the insurer's payoff.

Table 1: Moral Hazards

	CA	A	NAD	D	CD	χ^2	p
Whenever you insure property, there is no need of incurring lots of cost to guard it since insurance company would pay in case of any eventuality	3 (3.6%)	26 (29.9%)	1 (1.1%)	10 (11.5%)	47 (54.0%)	45.6	0.00
Whenever I'm claiming for compensation from insurance it is always advisable to fix the compensation value slightly higher	14 (16.1%)	23 (26.4%)	34 (39.1%)	4 (4.6%)	12 (13.8%)	70.8	0.00
If well schemed, insurance claims can always be profitable to the insured party	28 (32.2%)	38 (43.7%)	11 (12.6%)	0 (0.0%)	10 (11.5%)	54.1	0.00
I always ensure that I fully maximize on my medical insurance cover	6 (6.9%)	25 (28.7%)	38 (43.7%)	10 (11.5%)	8 (9.2%)	58.1	0.00
Over speeding is okay for as long as your car is well insured	1 (1.1%)	7 (8.0%)	10 (11.5%)	10 (11.5%)	59 (67.8%)	44.2	0.00

Source: Research Data (2016)

According to the findings on moral hazard 33.6% of the teachers were of the view that whenever one has insured a property, there is no need of incurring lots of cost to guard it since insurance company would pay in case of any eventuality. However, 65.5% were of a contrary opinion. This shows some level of moral hazard in the minds of teachers with insurance policies. This was found to have a significant impact on insurance uptake among primary school teachers in Nakuru Sub County.

Further 42.5% of the teachers agreed that whenever they were claiming for compensation from insurance it was always advisable to fix the compensation value slightly higher than the actual amount of loss incurred. 39.1% were neutral while 18.2% disagreed. There was also a significant association between the perception on inflation of claims and level of insurance uptake. This implies that insurance uptake to some extent was driven by the desire to profit from inflated claims at the time of compensation. The above view was also associated with the thinking that if well schemed; insurance claims can always be profitable to the insured party upheld by 75.9% of the teachers who participated in the study.

Moral hazards was also observed in a section of teachers (35.6%) who always ensure that they fully maximize on their medical insurance cover which was compulsory in the Kenyan employment sector. 43.7% were neutral while 20.7% disagreed. The behavior of exhausting all the insurance cover in medical insurance through unnecessary claims could be attributed to moral hazard. The finding goes hand in hand with a study by Kreider (1999) who held that applicants may overstate health limitations if the disutility of working is large and benefit receipt is an attractive alternative. This finding was also significantly associated with the level of insurance uptake in Kenya. Finally majority of teachers did not approve the idea of over speeding by virtue the nature of insurance cover one had acquired since 79.3% disagreed of that over speeding was okay for as long as your car is well insured.

Adverse Selection in Insurance Uptake

The second objective of the study sought to assess adverse selection in relation to insurance uptake among primary school teachers in Nakuru Sub County as shown on the findings in Table 2.

Table 2: Adverse Selection

	CA	A	NAD	D	CD	χ^2	p
It is not advisable to disclose sensitive information to insurance companies when purchasing insurance	18 (20.7%)	17 (19.5%)	29 (33.3%)	4 (4.6%)	19 (21.8%)	50.6	0.00
I acquire insurance policies when I expect some losses to occur in the future	24 (27.6%)	40 (46.0%)	15 (17.2%)	1 (1.1%)	7 (8.0%)	68.3	0.00
I don't mind paying higher premiums especially where the losses involved are obvious	7 (8.0%)	32 (36.8%)	40 (46.0%)	1 (1.1%)	7 (8.0%0	53.9	0.00
Sometimes I stay without insurance when I perceive the cost of loss to be incurred to be lower	4 (4.6%)	27 (31.0%)	33 (37.9%)	10 (11.5%)	13 (14.9%)	57.9	0.00
I always acquire insurance for activities where risk involved is high	9 (10.3%)	32 (36.8%)	36 (41.4%)	5 (5.7%)	5 (5.7%)	36.7	0.013
I prefer having higher value of properties declared when acquiring insurance	7 (8.0%)	37 (42.5%)	18 (20.7%)	11 (12.6%)	14 (16.1%)	55.0	0.00

Source: Research Data (2016)

On the various forms of adverse selection it was found out that there was rampant challenges in information disclosure since 40.2% of the teachers agreed that it is not advisable to disclose sensitive information to insurance companies when purchasing insurance, against 26.4% disagreed meaning that they would not fail to disclose important information in an insurance contract, 33.3% were however neutral. Teacher with the view of not disclosing vital information to insurance companies contributed a lot towards information asymmetry. The chi square results show a significant association between perception on information disclosure and insurance uptake.

Majority of the teachers (67.6%) agreed that they would acquire insurance policies when they expect some losses to occur in the future as opposed to 1.1% with contrary opinion, while 17.2% who were not sure. This shows that majority of teachers would acquire insurance policy when

the risk involved was obvious although they would not disclose this to the insurance company. This also signifies a high level of insurance uptake which is significantly associated with insurance uptake. Wang, Zhang, Yip and Hsiao, (2006) argued that evidence from the voluntary Rural Mutual Health Care scheme in poor rural China indicates that adverse selection can be substantial even when uptake is high which is in support to the above findings.

The findings further revealed that 44.8% of teachers would not mind paying higher premiums especially where the losses involved are obvious hoping to gain when the risk strikes, 9.1% disagreed while 46.0% were neutral. This finding is in agreement with the findings of Parkin et al (2000) who held that because of adverse selection in the insurance market, those people who know they have a greater chance of falling ill than the average, are the ones more likely to buy health insurance. Again this shows a high level of adverse selection on the side of primary school teachers for opting to purchase insurance at whatever cost to cover eminent losses without the know of the insurance company. This is an indicator of asymmetric information driving insurance uptake for teachers.

Teachers also indicated that sometimes they stayed without insurance when they perceived the cost of loss to be incurred to be lower. This view was upheld by 35.6% of the teachers who agreed as opposed to 11.4% who disagreed. The remaining 37.9% neither agreed nor disagreed. This implies that teachers who considered their risk profile to be low made little efforts to purchase insurance. This is an indicator of information asymmetry against the insurance company. Over half of the respondents 50.5% prefer having higher value of properties declared when acquiring insurance as opposed to 38.7% who would not. This is an indicator of adverse selection hoping to gain from an insurance contact which is supported by the findings of Morris, Devlin and Porklin,(2007) who argued that an individual would pay for insurance as long as the utility it yields was at least as high as the utility they would achieve if they did not buy insurance. Further analysis revealed that this significantly influenced insurance uptake among teachers in Nakuru Sub County.

Hypotheses Testing

The study was guided by two hypotheses stated.These were tested by performing a regression analysis to determine the relationship between variables. However, the study took into account the mediating effect of insurance awareness in shaping the moral hazard and adverse selection among teachers. The regression results are presented as shown:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.357[a]	.128	.096	.24431
a. Predictors: (Constant), Moral Hazard, awareness, Adverse selection				

The model summary results estimate the variations of dependent variables emanating from the variations in independent variables. The R Square = 0.128 which means that 12.8% of the variations in insurance uptake were explained by variations in asymmetric information.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.724	3	.241	4.045	.010[a]
	Residual	4.954	83	.060		
	Total	5.678	86			
a. Predictors: (Constant), Moral Hazard, awareness, Adverse selection b. Dependent Variable: Insurance Uptake						

The results of ANOVA test on show that ($F(3, 83) = 4.045$, $p < 0.01$) which implies that the variations explained in the study were significant. This means that the regression model derived in this study is significant in explaining the insurance uptake among teachers.

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	VIF
		B	Std. Error	Beta			
1	(Constant)	2.075	.202		10.251	.000	
	Awareness	-.331	.057	-.339	-2.293	.024	1.037
	Adverse selection	.256	.032	.299	2.758	.032	1.222
	Moral Hazard	-.118	.040	-.151	-2.454	.041	1.221

a. Dependent Variable: Insurance Uptake

The model coefficients show the relationships between independent and dependent variables. These together with the significance levels were used to determine whether the hypotheses in this study held or not.

The first hypothesis of the study was:

H_0 There is no significant relationship between moral hazard and uptake of insurance products in Kenya.

This was tested using regression analysis which revealed that (β = - 0.118, $p < 0.05$) which implies that there was a significant negative relationship between moral hazard and uptake of insurance. Therefore the study **rejectedH_0 and accepted H_1.** There is a significant relationship between moral hazard and uptake of insurance products in Kenya. Majority of the teachers were driven by moral hazard to acquire insurance policies which lead to insurance fraud. This finding is in agreement with the findings of Busch (2008) who stated that fraud and abuse of private healthcare benefits has three perpetrators; Fraud can take place when an individual patient perpetuates a fraud scheme against his or her own health plan, also called beneficiary fraud when the treatment providers and medical equipment vendors act on their own by using to their advantage a benefits plan, also known as provider fraud, and when there is collusion between the providers and patients, which essentially is a combination of provider and beneficiary fraud, but which opens the door to whole new sets of possible schemes to defraud the insurer.

The second objective of the study was:

H_0 There is no significant relationship between adverse selection and uptake of insurance products in Kenya.

The results of regression analysis testing this hypothesis revealed that (β =- 0.256, $p < 0.05$) which shows that the level of insurance uptake tended to be higher for people with higher levels of risks as compared to those with lower risks. This implies that adverse selection significantly influenced insurance uptake therefore the study **rejectedH_0 and accepted H_1.** There is a significant relationship between adverse selection and uptake of insurance products in Kenya. This finding concur with the finding of Godfried (2001) who studied the dental insurance demand in Holland, which was included in the standard medical insurance package in 1995 and came up with the conclusion that the agents with a large inclination toward risk tend to buy a supplementary dental insurance.

7. Summary of Findings

Adverse Selection

On the various forms of adverse selection it was found out that there were rampant challenges in information disclosure since a number of the teachers agreed that it was not advisable to disclose sensitive information to insurance companies when purchasing insurance. Teacher with the view of not disclosing vital information to insurance companies contributed a lot towards information asymmetry. Majority of the teachers agreed that they would acquire insurance policies when they expect some losses to occur in the future. Teachers would not mind paying higher premiums especially where the losses involved are obvious hoping to gain when the risk strikes. Teachers also indicated that sometimes they stayed without insurance when they perceived the cost of loss to be incurred to be lower. These findings signify that the level of adverse selection on insurance was high among the teachers of Nakuru sub County as majority believed that it was not right to disclose all information in an insurance contract. Further, majority were driven by the high risk levels to purchase insurance. Adverse selection significantly influenced insurance uptake. Majority of the insured parties were driven by the certainty of losses occurring which was not within the knowledge of the insurance companies. This explains why IRA (2013) report observed a high rate of collapse of insurance companies offering general insurance services. IRA (2015) had also highlighted a scenario where insurance companies were involved in underwriting risk they did not know about as a result of the information asymmetry in favor of the insured parties.

Moral Hazard

A number of teachers were of the view that therewas no need of incurring lots of cost to guard insured property since they would be compensated in case of any eventuality. Significant number teachers agreed that whenever they were claiming for compensation from insurance it was always advisable to fix the compensation value slightly higher than the actual amount of loss incurred. The view that insurance claims can always be profitable to the insured party was highly upheld by teachers. Moral hazards were also observed in a section of teachers who always ensured that they fully utilized their medical insurance cover. Moral hazard was also high among teachers who believed in profiting from an insurance claims. As a result, most insurance claims were inflated. Most insured parties were also keen on utilizing their insurance cover therefore driven by moral hazard. Moral hazard therefore was a key driver to insurance uptake among teachers. The IRA (2015) had observed a significantly high underwriting losses amounting to 105 million shillings. The same report revealed that 35% of the Kenyan insurance claims were fraudulent thus raising concerns on the future of insurance business in the country. This shows that moral hazard is true in the Kenyan insurance industry mostly inform of fraudulent claims.

8. Conclusion and Recommendation

The level of adverse selection on insurance was high in Kenya as this could be evident from the sampled population whose majority believed that it was not right to disclose all information in an insurance contract. Further, majority were driven by the high risk levels to purchase insurance.

Moral hazard was also high among teachers who believed in profiting from an insurance claims. As a result, most insurance claims were inflated. Most insured parties were also keen on utilizing their insurance cover therefore driven by moral hazard. In view of the above, Moral hazards and adverse selection arising from information asymmetry in the insurance industry have a significant impact on insurance uptake in Kenya. Teachers with high risk profile incline more to insurance compared those with low risk profiles. Further, there are significant voluntary non disclosures of essential information at the time of acquiring insurance contracts. This puts insurance companies at risk of high fraudulent claims. It is therefore important that insurance companies in Kenya work closely with one another's customer information sharing as well as other institutions such as the National intelligence service.

The government should also enact a regulation to allow insurance companies access critical information about customers before entering into an insurance contract. A platform similar to the credit referencing bureau would allow insurance companies address fraud associated with adverse selection.

Insurance companies should invest more on actuarial science to enhance their capacity to detect fraud in insurance claims as well take legal action on persons launching fraudulent insurance claims. By putting insurance industry straight in line with the principle of utmost good faith, there will be more trust in the industry that will enhance insurance uptake.

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