EFFECT OF MICRO-INSURANCE SEGMENT ON INSURANCE UPTAKE IN KENYA

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ABSTRACT
Microinsurance is the protection of low-income people against specific perils in exchange for regular premium payment proportionate to the likelihood and cost of the risks involved. With insurance uptake in Kenya still low, micro-insurance has been identified as a critical segment to deliver new products to the low-income population. Causal effect research design was used for the study. Secondary data on Microinsurance general premiums, Microinsurance life premiums and number of Microinsurance policies for the period 2009 to 2014 was obtained. The sample size was 10 insurance companies chosen to obtain the premiums, and number of scores for the years 2009 to 2014. The study used both descriptive and inferential statistics in analyzing the data. The multiple linear regression equation used took into consideration three independent variables for the 10 companies. The results revealed that Microinsurance variables influencing insurance uptake in Kenya, namely; micro-insurance general premiums, micro-insurance life premiums and number of Microinsurance policies influenced it positively. The study found out that the intercept was 0.790 for all years. Independent variables explain a substantial 69.3% of insurance uptake in Kenya as represented by adjusted R^2 (0.693). The study recommends that all insurers should invest in market analysts to help them research more on favorable Microinsurance products and this would improve insurance uptake. The study concludes that Microinsurance segment has a significant effect on the insurance uptake in Kenya.
Keywords: Insurance, Microinsurance, Insurance Uptake, Low-income, Risks.

INTRODUCTION

Background of the Study

Insurance has existed since at least 215 BC with a common goal of pooling related risks and offering a cushion to them. This concept has been practiced in various forms for over 1400 years (IIBI Report, 2001). Despite this fact, it is still a fact that insurance uptake is still low, not only in Kenya but all over the world. Insurance penetration is a global problem with developed markets like UK at about 11% and USA at about 8.6% (Swiss Re, Economic Research and Consulting, 2014).

The term Microinsurance was first published around 1999 (Preliminary Donor Guidelines, 1999).Microinsurance according to International Association of Insurance Supervisors is insurance that is accessible to the low-income population, provided by a variety of different entities, but run in accordance with generally accepted insurance practices. Microinsurance can also be defined as the protection of low-income people (those living on between approximately $1 and $4 per day) against specific perils in exchange for regular premium payment proportionate to the likelihood and cost of the risks involved (Insurance Regulatory Development Authority 2013).The target population typically consists of persons ignored by mainstream commercial and social insurance schemes, as well as persons who have not previously had had access to appropriate insurance.

Majority of people all over the world live on small and irregular incomes. Paying for insurance is a challenge when low-income households are struggling to meet a multitude of needs with scarce resources. Micro insurers recognize this as a problem hampering access to insurance, and are trying different ways to overcome it. Greater flexibility in premium payment is required. Low-income households appreciate paying in small irregular installments at their doorstep and to have their payments spread out over time (Collins et al 2009).

Low-income households are vulnerable to risks, a fact that is widely recognized as one of key contributor to under development (International Microinsurance Conference Nigeria, 2013). As opposed to developed countries, African countries do not have the financial means to provide the necessary government safety nets to successfully mitigate significant portions of their risks. Failure of informal schemes and government led programs to address the population's risk management needs opens a significant window of opportunity for microinsurance to mitigate low-income households' vulnerability to risks and help smooth out poverty.

Munich Re Foundation has established that Africa's booming population, low insurance penetration and increasing demand presents a huge opportunity for growth of insurance. Demand is high but availability and uptake is incredibly low and this is a big opportunity for Insurance Providers through Microinsurance (Reinhard, 2012).

The insurance penetration ratio, which is the gross value of insurance premiums as a percentage of GDP and growth ratio which measures how fast the number of clients is increasing or decreasing are often used as a measure of how the level of uptake is. The trend in the growth ratio is usually an important indicator of the programmes success over the period in question. This is especially true if participation is voluntary, in which case a positive growth ratio often indicates marketing success, product value, and appeal (Odemba, 2013). Insurance penetration measures the importance of insurance activity relative to the size of the economy. The penetration rate indicates the level of development of insurance sector in a country. The higher the penetration rate the more developed insurance market is in that particular economy (Onduso, 2014).

According to the reinsurer Swiss Re's global insurance report, total premiums in Africa amounted to US$71.9 billion in 2012, which translates into a penetration rate of 3.65%. As one would expect, this is well below the global average, which is 6.5%, though it is above the average for emerging markets of 2.65%.Africa performs better than some regions, including the Middle East, Central &Eastern Europe, and South& Central America. Still, it is notable that Africa's insurance density (the ratio of premiums per capita) is the lowest of any region in the world.

Premiums grew by 3.3% globally and by 11.8% in the emerging markets in that year. In part this was due to a growing number of clients moving into the wealthy and middle income brackets in these countries, but it is also attributable to insurance expanding into new markets through Microinsurance (Swiss Re, 2013). Microinsurance was majorly incorporated as a form of financial inclusion and access both of which are necessary preconditions for increasing insurance uptake. By giving insurance access to the low-income and economically vulnerable households, the microinsurance agenda will support the Government's financial sector policy objectives outlined in Vision 2030 (AKI, 2013).

Micro-insurance premiums have been on the rise. By September 2014, a total of KES 444.42 million were reported under Microinsurance segment compared to KES 202.54 million of premiums reported by the end on the previous year (AKI, 2014). Although Microinsurance was introduced primarily to improve insurance uptake in Kenya the uptake by the low income earners is still very low and hence insurance demand is still very low at 3.44% and with our aspiration to get to at 6.5% by 2016. Although insurers are becoming more active in Microinsurance and are optimistic about future profitability insurance uptake is not still at par. The study therefore sought to find out the actual effect of Microinsurance segment on insurance uptake in Kenya.

Statement of the Problem

Microinsurance was introduced primarily to improve insurance uptake in Kenya with the introduction of enhanced distribution channels like banc assurance it would have been expected that the Insurance uptake would have been enhanced. Unfortunately this has not been the case; the issue of insurance uptake remains a key concern for insurance practitioners and scholars as well as policy makers. The very low insurance penetration in Kenya implies an inherent problem in the economy. According to AKI reports (2014; 2015) the insurance penetration in Kenya is 3.44% percent of the country's GDP which is low and not Consistent with Kenyas aspiration to be a middle-income country by the year 2030.For Kenya to get there the contribution of insurance to the GDP has to get to at least 10%. The study therefore was seeking to find out why the uptake of insurance is still low despite introduction of microinsurance.

Objectives of the Study

The general objective was to assess effect of micro-insurance segment on insurance uptake in Kenya.

Specific Objectives

- To determine the effect of microinsurance life premiums on insurance uptake in Kenya.
- To determine the effect of microinsurance general premiums on insurance uptake in Kenya.
- To determine effect of number of microinsurance policies on insurance uptake in Kenya.

Research Hypothesis

- There is no significant effect of microinsurance life premiums on insurance uptake in Kenya.
- There is no significant effect of microinsurance general premiums on insurance uptake in Kenya.
- There is no significant effect of microinsurance policies on insurance uptake in Kenya.

Significance of the Study

The findings of this research would be beneficial to scholars and researchers as it shall add to the existing body of knowledge in the field of Insurance and also act as a spring board for further research in the same area and other related areas. To the Development and Policy makers in Kenya, in reference to Millennium Development Goals and Vision 2030, the findings will be critical because, they will contribute in the areas Enhanced insurance uptake will directly increase the

country' GDP, thus aiding the economic pillar of development under vision 2030.

Scope of the Study

The study focused on Microinsurance segment; premiums, and number of Microinsurance policies written from Microinsurance companies in Kenya. The targeted population comprised of 10 firms underwriting Microinsurance businesses since 2009 namely; AIG, APA, Britam, CIC, Heritage, ICEA, Jubilee, Kenya Orient, Kenindia and UAP since 2009. The secondary data collected was used to determine the cause and effect relationship by analyzing the changes in Microinsurance; general and life premiums and no of Microinsurance policies from the 10 insurance companies and their effect on insurance uptake.

Limitation of the Study

The study used historical data which may not be accurate to forecast future trends hence it may limit possibility of generalizing findings to the future periods. However, the researcher used six financial year information which is a longer period and the findings are therefore likely to recur in the future.

LITERATURE REVIEW

Concept of Microinsurance

Microinsurance is the protection of low-income people against specific perils in exchange for regular premium payments proportionate to the likelihood and cost of the risk involved. It is not a specific product or product line. It is also not limited to a specific provider type. It is the provision of cover to a specific market segment, that's the low-income persons. It is also defined as a mechanism to protect poor people against risk (accident, illness, death in the family, natural disasters) in exchange for insurance premium payments tailored to their needs, income and level of risk. It is aimed at the developing world's low-income workers, especially those in the informal sector of the economy who tend to be underserved by mainstream commercial and social insurance schemes(Tomchinsky, 2008).

Microinsurance is defined by the International Association of Insurance Supervisors (IAIS, 2007) as "insurance that is accessible to the low-income population, provided by a variety of different entities, but run in accordance with generally accepted insurance practices. The risk insured under a Microinsurance policy is managed based on insurance principles and funded by premiums. This definition excludes social welfare and emergency assistance by governments, as this is not funded by premiums relating to the risk, and benefits are not paid out of a pool of funds that is managed based on insurance and risk principles(Smith, 2010).

Microinsurance recognizes that poor people are remarkable reservoirs of energy and knowledge. And while the lack of financial services is a sign of poverty, today it is also understood as an untapped opportunity to create markets, bring people in from the margins and give them the tools with which to help themselves (Annan, 2005).

Microinsurance aims at enabling low income earners manage risks such as Accident, Illness, theft, death, fire and natural disasters such as flood and drought. Microinsurance cover is provided in exchange for affordable insurance premium tailored to the needs, income and nature of risks faced by buyers. Those targeted by Microinsurance include the JuaKali sector, farmers, farm workers and house helps among others. This group lacks appropriate mechanisms to control risks allowing losses to drive them into helpless situations and abject poverty given that they cannot afford conventional insurance products. It is important to note that the majority of the Kenyan population falls within this category. IRA has recognized this need and is keen on facilitating the insurance industry to develop affordable insurance products to serve the needs of this group (IRA 2014).

Origin and History of Microinsurance

Microinsurance is generally, but inaccurately, referred to as a new concept. It first appeared as a new financial service within microfinance and then developed into a sector of its own. However, it is only the term - Microinsurance that is fairly new. The principles of Microinsurance are not new: risk pooling and risk transfer trace back to some of the precursors of insurance, such as the Roman burial guilds Small policies, such as industrial life, and mutual protection schemes were offered in the 19th and early 20th century. Mechanisms of Microinsurance were preceded by cooperatives and credit unions, some of which created their own insurance companies. Microinsurance was developed as part of Microfinance in the 90's when Microfinance Institutions started offering insurance products, primarily credit life, to protect their loan portfolios. Some of these policies were eventually underwritten by commercial insurers thus beginning their involvement in MI.Since then; MFIs have sought to expand their offerings of financial services, including more complex insurance products. The term "Microinsurance" was first published around 1999 and defining it has been a subject of much debate (Preliminary Donor Guidelines, 1999).

Traditional Insurance

Anja, Doubell and Herman (2012) stated that Out of 16 million insurable Kenyans 12 million were stated to be

in the Microinsurance sector and the other 4 million are in traditional insurance. This signified the potential impact of the micro products in the development of insurance and its penetration within Kenya. Traditional insurance segment focuses on corporate, middle and high class of Kenyans. The Kenyan insurance industry is small. Total gross insurance premiums generated in 2008 were KSh55 billion (US$ 730 million or 2.6% of GDP), of which gross premiums for general and long-term business consisted of KSh35 billion (US$ 460 million or 1.7% of GDP) and KSh20 billion (US$ 270 million or 0.9% of GDP), respectively. Voluntary insurance serves 3.6% of adult population, while 1% of adults have life insurance. The industry has not grown much during last ten years (IRA Report, 2013).

Currently traditional insurance products In Kenya are expensive and not readily available to the poor. Makove (2011) indicated that the current insurance regulatory framework in Kenya focuses on the traditional insurance with little recognition of Microinsurance. According to research carried out by Swiss Re in 2007, most growth in the insurance industry over the past decade has come from the wealthy and middle income markets in emerging economies. Premiums grew by 3.3% globally and by 11.8% in the emerging markets in that year. In part this was due to a growing number of clients moving into the wealthy and middle income brackets in these countries (Swiss Re, 2007).

Micro-Insurance in Kenya

Microinsurance is an emerging trend in Kenya and as such its regulation is not provided for in the existing Insurance Law. It is provided by a variety of institutions, and delivered in a way appropriate to low-income households with the products being designed as commercial insurance products that are fully funded by the premiums paid (Hougaard et al, 2009). Those targeted by Microinsurance include the Jua Kali sector, farmers, farm workers and house helps among others. This group lacks appropriate mechanisms to control risks allowing losses to drive them into helpless situations and abject poverty given that they cannot afford conventional insurance products. It is important to note that the majority of the Kenyan population falls within this category. IRA has recognized this need and is keen on facilitating the insurance industry to develop affordable insurance products to serve the needs of this group. In addition, for some of those already active in Microinsurance; this could already make a significant contribution to policy numbers and even total premiums. In the case of Co-operative Insurance Company (CIC), Microinsurance is reported to already contribute 20% of total premiums (Kuria, 2010). CIC collected 5.6% and 3.5% of the total life and general direct premiums collected, respectively (IRA, 2008). In terms of number of policyholders, the contribution would be much more significant. This reflects the commercial potential of Microinsurance, particularly given the current small retail life base in the traditional industry (IRA, 2008).

Anja, Doubell and Herman (2012) spelt out the significance of Microinsurance in the Kenyan market by stating the development and penetration rate of Microinsurance to be 3% of the GDP while life insurance accounted for 1% .Out of 16 million insurable Kenyans 12 million were stated to be in the Microinsurance sector. This signified the potential impact of the micro products in the development of insurance and its penetration within Kenya. Already some insurance and non-insurance institutions have welcomed Microinsurance by introducing products such as Afya Bora by CIC and Salama Sure by UAP with Faulu Kenya offering Faulu Afya. Most of these products focus on primary risks such as Livestock and Crop, Health, Funeral and Life Insurance. Other financial institutions facilitate development of micro-insurance through marketing, distribution, serving as premium collection and claims payment points e.g. Banks, Microfinance Institutions, Mobile Money Transfer Providers and Sacco's.

Insurance Uptake

Uptake of insurance is the ratio of Gross Direct Premiums to Gross Domestic Product (Odemba, 2013) this currently stands at just about 3.44% in Kenya, which is very low. Currently, work is being done by insurance companies in the area of Microinsurance. Insurance providers can build customer involvement and loyalty; establish competitive differentiation; and increase referral value by applying various initiatives (Business Daily, 21st January 2013).

Insurance uptake occurs due to the uncertainties that affect the welfare of the People. Since insurance provides resources that will be available in the future in case of occurrence of adverse shocks, the decision to buy insurance, or to self-insure through savings, is also related to the nature and extent of the uncertainty Beck and Webb (2003), Browne and Kim (1993), and Outreville (1996). Despite the fact that insurance has been practiced for over 100 years, it is still a fact that insurance uptake is still very low, not only in Kenya but the world over. Insurance penetration is a global problem with developed markets like UK at about 11% and USA at about 8.6% (Swiss Re, Economic Research and Consulting 2007).

Total gross premiums for 2008 were KSh 55 billion (US$ 730 million or 2.6% of GDP), of which gross

premiums for general and long-term business consisted of KSh 35 billion (US$ 460 million or 1.7% of GDP) and KSh 20 billion (US$ 270 million or 0.9% of GDP), respectively. This compares favourably to insurance penetration in neighbouring countries such as Uganda (0.6% of GDP), Ethiopia (0.9% of GDP) and Tanzania (0.9% of GDP) but less favourably to more developed African countries such as South Africa (15.3% of GDP), Namibia (8.1% of GDP), Mauritius (4.9% of GDP) and Botswana (3.9% of GDP) (Swiss Re, Economic Research and Consulting, 2008).

Insurance Penetration

Insurance penetration shows the relationship between insurance consumption and the size of the economy, that is the share of GDP. It represents the average insurance spending per GDP in a given country. It is therefore expressed as the ratio between insurance premium and the GDP. Insurance penetration measures the importance of insurance activity relative to the size of the economy. The penetration rate indicates the level of development in a country. The higher the penetration rate the more developed insurance market is in that particular economy (Onduso, 2014). According to (2014 Swiss Re) penetration In Africa was: 15.44% in South Africa, 15%in Egypt, 7.7% in Namibia, 5.8% in Mauritius, 3.44% in Kenya and 1.8%in Tunisia. According to the association of Kenya Insurers Annual Report 2013, the overall insurance penetration has increased to 3.44%. AKI chairperson Justus mutiga in the 2013 insurance annual report observed that microinsurance and bancassurance will be the key drivers for premium growth and penetration in the industry (AKI, 2014).

Growth Ratio

The growth ratio is defined as the ratio of increase in the number of clients it measures how fast the number of clients is increasing or decreasing , how well developed is insurance awareness and how competitive is the product vis-à-vis other products or household risk management alternatives. To measure growth over more than one period, this formula is used. The formula for Growth over the past three periods including the current period is defined as follows: Growth ratio n = (Number of insured n – Number of insured n-3) / Number of insured n-3.

Micro-Insurance Premiums

Micro-Insurance premium is the amount of money that an individual or business must pay for a micro-insurance policy. The Microinsurance premium is considered income by the insurance company once it is earned, and also represents a liability in that the insurer must provide coverage for claims being made against the policy. Because the coverage value for Microinsurance is lower than a usual insurance plan the insured people pay considerably smaller premiums, Microinsurance premiums are typically regular annual, quarterly, and monthly and are based on age or other specific risk characteristics, and collected regularly Mostly from bank deductions.

Micro-Insurance Policy

It is a contract of insurance, describing the term, coverage, premiums and deductibles. In insurance, the insurance policy is a contract (generally a standard form contract) between the insurer and the insured, known as the policyholder, which determines the claims which the insurer is legally required to pay. In exchange for an initial payment, known as the premium, the insurer promises to pay for loss caused by perils covered under the policy language. Insurance contracts are designed to meet specific needs and thus have many features not found in many other types of contracts. Since insurance policies are standard forms, they feature boilerplate language which is similar across a wide variety of different types of insurance policies. The insurance policy is an integrated contract; it includes all forms associated with the agreement between the insured and insurer (Garand, 2010).

METHODOLOGY

Research Design

Research Design refers to the structure of an enquiry, or a logical task undertaken to ensure that evidence collected enables one to answer questions as unambiguously as possible (De Vaus, 2001).The study sought to determine the causal effect relationship that exists between Microinsurance and insurance uptake in Kenya, This study employed a causal research design which involves test of relationships between variables.

Location of the Study

The study took place at the Headquarters of 10 firms underwriting micro medical and property businesses for the past six years namely; AIG, APA, Britam, CIC, Heritage, ICEA, Jubilee, Kenya Orient, Kenindia and UAP, It also took place at the national treasury; all the headquarters of the above are located in Nairobi.

Population of the Study

Population is defined as the entire group of individuals, events or objects having common characteristics that conform to a given specification (Mugenda&Mugenda, 2003). The population of the study included the 10 firms underwriting Microinsurance businesses namely; AIG, APA, Britam, CIC, Heritage, ICEA, Jubilee, Kenya Orient, Kenindia and UAP since 2009 and the national treasury. Since the population was not large, the study took a census approach.

Sampling Procedure and Sample Size

The sample size was 10 Head of Department of either Underwriting or Finance Department in the insurance companies chosen to obtain the premiums, and number of scores for the years 2009 to 2014.The Population was not large; so the study took a census approach of all the microinsurance premiums and number of policies from the ten companies underwriting microinsurance business, for the period 2009-2014.The period was long enough to help predict future trends.

Research Instruments

A data collection checklist was used to collect data on Microinsurance premium, and number of policies, resulting from Microinsurance business for the10 selected insurance companies between the periods 2009 to 2014 also a data collection checklist was used to collect information on population and GDP estimates. The contents and face validity of the checklist was checked by the supervisor.

Data Collection

According to (Flick, 2009), data collection is the gathering of empirical evidence with the objective of gaining new insights about the situation and to answer the questions that initiated the research. Data collection checklists were administered specifically to the Head of Department of either Underwriting or Finance Department in the insurance companies chosen to obtain the premiums, and number of scores for the years 2009 to 2014. Data collection checklist was administered to officers for National Treasury to collect information on population and GDP estimates.

Data Analysis and Presentation

The study used both descriptive and inferential statistics in analyzing the data. Analysis was done with the help of Statistical package for social sciences (SPSS version 23). First, data collected was cleaned, sorted and collated. Descriptive statistics were used to profile the characteristics of the data. The study used multiple linear regression equation and the method of estimation was Ordinary Least Squares (OLS) so as to establish the relationship between the Microinsurance and insurance demand variables. The F- ratio was used to test the overall significance of the estimated multiple linear regression model while t-statistic was used to test the hypotheses on the individual regression coefficients at 5% level of significance. The findings were presented in form of frequency tables and graphs to aid in the analysis and ease with which the inferential statistics were drawn.

Analytical Model

The multiple linear regression equation used took into consideration three independent variables for the 10 companies from 2009 to 2014 period. It was presented as follows: $Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where; i=1, 2

Y_i = insurance uptake (1=insurance penetration, 2=growth ratio)

X_1 = the Microinsurance life premiums of the 10 companies for the past 6 years

X_2 = the Microinsurance general premiums of the 10 companies for the past 6 years

X_3=number of Microinsurance number of policies of the 10 companies in past 6 years.

β_1, β_2, β_3=regression model coefficients.

β_0 = Constant/Y intercept.

ε = the values of an unobserved error term.

Tests for Ordinary Least Square Assumptions

The tests that were used included homoscedasticity, Multicollinearity and autocorrelation. Homoskedacity was used to determine whether the variance of the error term is constant and same for all observations (Anderson, 2007). Heteroscadacity was detected by use of scatter plots. Variance inflation factor and tolerance levels are used to test for Multicollinearity. The presence of Multicollinearity makes it difficult to isolate the impact of each independent variable on dependent. Durbin Watson test (d) static was used to test for autocorrelation which occurs when regression error are correlated across observations. Autocorrelation is not present when Durbin Watson static takes values between 0 and 4.

Ethical Consideration

Ethical consideration in research gives researcher guidelines to ensure that research is carried out in the best interest of the respondents (Cardwell, 1999). They include informed consent, Confidentiality and harm for the respondents (Regis, 2006). Consent to collect data was sought from the officer in charge. The respondents were given freedom to choose whether to participate or not to participate in this study and also the researcher sought authority from NACOSTI to collect data and permission from 10 selected insurance and the National Treasury who provided the data. Confidentiality denotes the researcher's ethical obligation to keep the respondents' identity and responses private (Neumann, 2001). In this study the respondents were assured of confidentiality of the information they gave. To maintain this confidentiality anonymity of the respondents was maintained by not asking them to write their name in the data collection forms.

Ethics require that researchers carry out a study in a way that does not cause physical or psychological harm to the respondents (Urombo, 2000). This study protected the respondents from psychological harm by not seeking information that was private and sensitive

to avoid causing them embarrassment, irritation, anger, emotional stress and lowering their self-esteem.

RESULTS AND DISCUSSION

Descriptive Statistics and Test for Normality

To test for normality of the data, descriptive statistics was used. In order to make accurate and reliable conclusions normality test was used to determine the normal distribution of the sampled data. The mean was used to determine the average and standard deviation was used to measure dispersion from the mean. This was explained by the Table below.

Table 2: Descriptive Statistics, N=24, 6

	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Skewness Std. Error
Insurance uptake	2.51	3.60	2.9450	.40806	2.902	0.472
Microinsurance life premiums	240000	79000000	10200125.00	17854925.52	2.014	0.472
Microinsurance general premiums	308000	50200000	8958260.04	12441452.98	0.912	0.472
Number of Microinsurance Policies	5000	368000	109608.79	94333.970	0.062	0.845
Gross direct premiums	2365	4026	3159.00	640.152	1.145	0.845
Gross domestic Product	94108	126119	106503.33	11222.586	0.594	0.845

The skewness statistic was within the range of ± 3 for microinsurance life premiums, microinsurance general premiums and number of microinsurance policies which is an indication that data is normal, unbiased and it can be used reliably to make inferences in this study (Table 2). The mean represents generalization of data indicating that the data values were average. Microinsurance life premiums had a mean of 10,200,125 while Microinsurance general premiums had a mean of 8,958,260, findings depict that the micro-insurance premiums both life and general and steadily increased over the study period. Gross direct premiums had a mean of 3159 while gross domestic product had a mean of 106503.33 the standard deviations for the variables are not close to zero which depicts that the values not concentrated around the mean .Microinsurance life premiums had the highest deviation this could imply that it would have a higher effect on the independent variables.

Heteroscedasticity Test

A residual plot was used to determine whether the dependent variable exhibit equal levels of variance across a range of independent variables(s), the error term is constant and the same for all observations. It shows one axis for predicted scores and one axis for errors of prediction, initial visual examination can isolate any outliers, otherwise known as extreme scores in the data set the residuals and the variance of the residuals should be the same for all predicted scores (homoscedasticity). If this is true, the assumption is met scores will be randomly scattered about a horizontal line. In contrast, any systematic pattern or clustering of scores is considered a violation. (Tabachnick, B. G. & Fidel, L. S. 2007).

In Figure 2 as the predictive values increases the residuals are neither increasing nor decreasing, they are fairly clustered around the line of total fit around the center. This shows existence of Homoskedacity and absence of heteroscadacity which implies the standard errors are correct and have equal variances thus the results were used for hypothesis testing and ordinary least square method was used.

Multicollinearity Test

To test for correlation between the independent variable Multicollinearity was used. Existence of Multicollinearity is evidenced by the standard errors for the regression coefficient estimators becoming inflated which results in t-statistics becoming too small and less powerful in terms of their ability to reject the null hypothesis. Variance inflation factor and tolerance levels are used to test for Multicollinearity VIF of less than 10 and tolerance level of more than 0.1 are preferred (Munga, 2014).

Multicollinearity was eliminated through a stepwise regression technique systematically. Aczel and Sounderpadian (2002) states that stepwise regression is a mixture of backward elimination and forward selection methods which involves eliminating a variable and entering a variable permanently to the regression equation respectively .a summary of eigen values, conditional index and variance proportions is provided in the Table below.

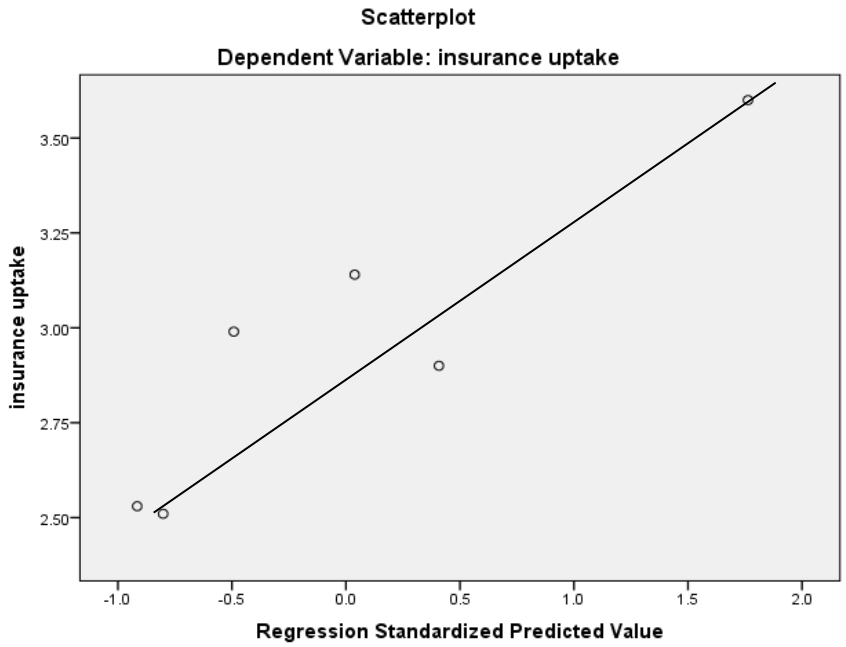

Figure 1. Test for heteroscadacity

Table 3: Collinearity diagnostics

	Collinearity Statistics	
Model	Tolerance	VIF
Microinsurance General premiums	0.051	3.68
Microinsurance Life Premiums	0.033	2.71
Number of Microinsurance Policies	0.052	1.74

Table 4: Pearson correlation coefficients

		Insurance uptake	Microinsurance life premiums	Microinsurance general premiums	Number of microinsurance policies
Pearson correlation	Insurance Uptake	1.000	0.903	0.865	0.887
	Microinsurance Life Premiums	0.903	1.000	0.973	0.973
	Microinsurance General Premiums	0.865	0.973	1.000	0.957
	Number Of Microinsurance Policies	0.887	0.973	0.957	1.000
Sig. (1-tailed)	Insurance uptake	0.00	0.007	0.013	0.009
	Microinsurance life premiums	0.007	0.000	0.001	0.001
	Microinsurance General premiums	0.013	0.001	0.000	0.001
	Number of Microinsurance policies	0.009	0.001	0.001	0.000

Dependent Variable: Insurance uptake

In the above table Microinsurance life premiums had the lowest tolerance level at 0.33 and number of Microinsurance policies had the highest tolerance level at 0.52 .tolerance level for all the independent variables were greater than 0.1 this suggested that there was no Multicollinearity problem. Microinsurance general premiums had the highest VIF of 3.68while number of Microinsurance premiums had the lowest VIF, all the variables had a VIF of less than 10 hence there was an indication that there was no Multicollinearity among the independent variables thus it was possible to isolate the effect of each independent variable on the dependent variables.

Pairwise Correlations

To determine the degree or strength of linear relationship among the variables Pearson correlation (r) was used. Linearity increases the predictive power

of the model and the validity of the estimated coefficients. The study determined the correlation between the variable to determine the strength and direction of the relationship at 5% significance level. A correlation of r>+0.7 implies that the variable are strongly related negatively or positively.

Person correlation was used to determine the relationship between Microinsurance life premiums, Microinsurance general premiums, number of Microinsurance and insurance uptake .the correlation coefficient for Microinsurance life premiums and insurance uptake was 0.903 with p–value (0.07) which was found to be significant at 5% significance level this implies that there exists a strong positive relationship between microinsurance life premiums and insurance uptake. An increase in microinsurance life premiums increases insurance uptake.

The correlation coefficient for microinsurance and insurance uptake was 0.865 with *P*-value (0.13) which was found to be significant at 5 % significance level this implies a strong positive relationship between Microinsurance general premiums and insurance uptake. An increase in Microinsurance general premiums will lead to an increase in insurance uptake.

The correlation coefficient between number of Microinsurance policies and insurance uptake was 0.887 with *P*-value (0.09) which was found to be significant at 5 % significance level this implies a strong positive relationship between number of Microinsurance policies and insurance uptake. An increase in number of Microinsurance policies will lead to an increase in insurance uptake.

Regression Analysis

The multiple correlations (R) indicates the correlation between dependent variable and the independent variables jointly predicted by the model .the multiple coefficient of determination (R^2) determines the changes of variation in dependent variable as explained by dependent variables jointly. A coefficient of R^2>0.7 is explained by the independent variables and the existence of a strong correlation between variables. The table below shows the values of R and R^2.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	Durbin-Watson
1	0.790[a]	0.693	0.557	0.27164	0.823	1.892

b. Dependent Variable: insurance uptake

In Table 4.6 multiple coefficients of correlation (R) was 0.790.which implies that the degree of association between insurance uptake and Microinsurance life premiums, Microinsurance general premiums and number of Microinsurance policies is strong and positive. The (R^2) was 69.3% which implies that 69.3 % variations in insurance uptake are explained by Microinsurance life premiums, Microinsurance general premiums and number of Microinsurance policies in the model, while 30.7% of variations in insurance uptake is explained by random error or other factors.

Table 6: ANOVA

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	0.685	3	0.228	8.564	0.0414[b]
	Residual	0.148	2	0.074		
	Total	0.833	5			

From the ANOVA statistics in the above table, the processed data, which are the population parameters, had a significance level of 0.414 which shows that the data is ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 8.564 Since F calculated is greater than the F critical (value = 4.76),this shows that the overall model was significant i.e. there is a significant relationship between insurance uptake and Microinsurance in Kenya .

Regression Coefficients

In determining the cause effect relationship between the dependent variable and the explanatory variables the regression coefficients were tested at the 5% level of significance using t –test.

Table7: Test of Significance of Regression Coefficients

Model	Unstandardized coefficients		Standardized coefficients			95.0% confidence interval for B		Collinearity statistics	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1 (Constant)	2.635	0.273		9.669	0.0035	1.462	3.807		
Microinsurance General premiums	7.80	0.000	325	-0.245	0.024	0.000	0.000	0.051	19.781
Microinsurance life premiums	2.77	0.000	1.005	0.610	0.031	0.000	0.000	0.033	30.598
Number of Microinsurance policies	6.87	0.000	0.221	0.168	0.016	0.000	0.000	0.052	19.380

a. Dependent Variable: insurance uptake

Regression Equation

The coefficient of regression table above was used in coming up with the model below:

$IU = 2.635 + 7.80MGP + 2.77MLP + 6.87MP + \varepsilon$

Where IU is insurance uptake, MGP is micro-insurance general premiums, MLP is micro-insurance life premiums and MP is number of micro-insurance policies. From the model, taking all factors (micro-insurance general premiums, micro-insurance life premiums and number of microinsurance policies) constant at zero, insurance uptake in Kenya was 2.365.

The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in micro-insurance premiums will lead to a 7.80 increase in insurance uptake in Kenya was 2.635; unit increase in micro-insurance life premiums will lead to a 2.77 increase in insurance uptake in Kenya while a unit increase in number Microinsurance policies will lead to a 6.87 increase in insurance uptake in Kenya. According to the model, all the variables were significant as their significance value was less than 0.05, micro-insurance life premiums, microinsurance general premiums and numbers of micro-insurance policies all were positively correlated with insurance uptake in Kenya.

The Effect of Microinsurance Life Premiums on Insurance Uptake

The study aimed at determining the effect of microinsurance life premiums on insurance uptake in Kenya The coefficient obtained from regression was 2.77 with (p-value 0.001<0.05) thus the null hypothesis that there is no significant effect of microinsurance life premiums on insurance uptake in Kenya was rejected, There is a statistically significant positive relationship between microinsurance life premiums and insurance uptake in Kenya unit increase in micro-insurance life premiums will lead to a 2.77 units increase in insurance uptake in Kenya.

The Effect of Microinsurance General Premiums on Insurance Uptake

The study sought to find the effect of microinsurance general premiums on insurance uptake in Kenya .The coefficient obtained from the regression was 7.80 with (p-value 0.001<0.05) thus the null hypothesis that there was no significant effect of microinsurance general premiums on insurance uptake in Kenya was rejected, leading to the conclusion that there exists a statistically significant relationship between microinsurance general premiums and insurance uptake in Kenya. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in micro-insurance general premiums will lead to a 7.80 units increase in insurance uptake in Kenya.

The Effect of Number of Microinsurance Policies on Insurance Uptake

The study aimed at finding the effect of number of microinsurance policies on insurance uptake in Kenya. The coefficient obtained from the regression was 6.87 with (p-value 0.001<0.05) thus the null hypothesis that there was no significant effect of number of microinsurance policies on insurance uptake in Kenya was rejected this led to the conclusion that there exists a statistically significant relationship between number of microinsurance policies on insurance uptake. A unit increase in number of Microinsurance policies will lead to a 6.87 unit increase in insurance uptake in Kenya.

The implication of these results is that microinsurance segment had a significant effect on insurance uptake .this makes the microinsurance segment an important segment for improving insurance uptake in Kenya .This is in line with Laura (2014) who in her paper

"Micro-insurance learning" observed that insurance uptake was largely positively affected by microinsurance insurance premiums and number of insurance policies.

SUMMARY OF FINDINGS

The study sought to establish the effect of Microinsurance segment on insurance uptake in Kenya. This study research design was causal research which involved test of relationships between variables. This was achieved by analyzing the changes in insurance uptake arising as a result of changes in microinsurance general premiums, microinsurance life premiums and number of microinsurance policies .the significance of this study was established through the ANOVA tables.

Normality of data was tested by use of Kolmogorov-Smirnov test. The Kolmogorov-Smirnov test showed a test distribution that is normal for all the models. This further confirmed normality of data. The presence of homoscedasticity was determined by use of residual plot diagrams which showed that residuals had equal variances suggesting the presence of homoscedasticity. The Multicollinearity was tested by use of VIF and tolerance levels. microinsurance life premiums had the lowest tolerance level at 0.33 and number of microinsurance policies had the highest tolerance level at 0.52 .tolerance level for all the independent variables were greater than 0.1 this suggested that there was no Multicollinearity problem. Microinsurance general premiums had the highest VIF of 3.68 while number of microinsurance premiums had the lowest VIF, all the variables had a VIF of less than 10 hence there was an indication that there was no Multicollinearity among the independent variables. The correlation of the errors across the observations was checked by the use of Durbin Watson d statistic = 1.892 greater than 0 and less than 4, thus autocorrelation was absent, thus preventing the occurrence of type 1 error.

The processed data, which are the population parameters, had a significance level of 0.254 which shows that the data is ideal for making a conclusion on the population's parameter. The F calculated at 5% Level of significance was 8.564. Since F calculated is greater than the F critical (value = 4.76),this shows that the overall model was significant i.e. there is a significant relationship between insurance uptake and Microinsurance in Kenya .coefficients of correlation (R) was 0.790 .which implies that the degree of association between insurance uptake and microinsurance life premiums, microinsurance general premiums and number of microinsurance policies is strong and positive. The (R^2) was 69.3% which implies that 69.3 % variations in insurance uptake are explained by microinsurance life premiums, microinsurance general premiums and number of microinsurance policies in the model, while 30.7% of variations in insurance uptake is explained by random error or other factors.

The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in micro-insurance premiums will lead to a 7.80 increase in insurance uptake in Kenya was 2.635; unit increase in micro-insurance life premiums will lead to a 2.77 increase in insurance uptake in Kenya while a unit increase in number Microinsurance policies will lead to a 6.87 increase in insurance uptake in Kenya. According to the model, all the variables were significant as their significance value was less than 0.05, micro-insurance life premiums, microinsurance general premiums and numbers of micro-insurance policies all were positively correlated with insurance uptake in Kenya.

CONCLUSIONS

The study found out that there is a statistically significant positive relationship between microinsurance life premiums and insurance uptake in Kenya An increase in microinsurance life premiums will lead to an increase in insurance uptake. This is in line with Laura (2014) who in her paper "Micro-insurance learning" observed that insurance uptake was largely positively affected by insurance premiums. In addition the study also concluded there was a positive relationship between microinsurance general premiums and insurance uptake. An increase in microinsurance general premiums will lead to an increase in insurance uptake. The study found a strong positive relationship between number of microinsurance policies and insurance uptake. An increase in number of microinsurance policies will lead to an increase in insurance uptake.

RECOMMENDATIONS

Based on the findings of this study the researcher made the following recommendations:

- Since microinsurance general premiums had the highest positive and significant effect on insurance uptake, insurance companies should capitalize more on microinsurance general products to get a competitive edge.
- Insurers should invest more in market analysts to help them research more on favorable microinsurance life products. This would enhance both microinsurance life premiums which were not doing as well like microinsurance general premiums.
- The study recommends that the government through the insurance regulatory authority should

support the microinsurance segment by coming up with regulations that favor the low income earners this would improve number of Microinsurance policies consumed and as a result insurance uptake would improve.

- Assess the effects of micro-insurance on the financial performance of insurance companies
- A similar research can be undertaken on wider scale, for example covering all the insurance companies in East Africa to see whether there is a similarity.
- The study targeted firms underwriting micro-medical and property businesses.
- Further studies should cover all the firms underwriting any insurance services to have a more general conclusion.

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