

**THE EFFECT OF MOBILE PHONE TECHNOLOGY ON THE
GROWTH OF MICRO INSURANCE IN KENYA**

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DECLARATION

This research project is my original work and has not been presented for a degree in any other university or learning institution.

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DEDICATION

This paper is dedicated to my parents Mr Johnson Gikonyo Kanyuira & Mrs Susan Ngenia Gikonyo and all my sisters for their generous Multi-faced support to see me through, similarly to all my nephews and nieces to act as an encouragement and inspiration to their future.

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LIST OF ABBREVIATIONS

AIS	Association of Insurance Supervisors
AKI	Association of Kenya Insurers
CIC	Cooperative Insurance Company
GDP	Gross Domestic Product
GPRS	General Packet Radio Service
IAIS	International Association of Insurance Supervisors
ICT	Information and Communication Technology
ILO	International Labour Organisation
IRA	Insurance Regulatory Authority
MFI	Micro Finance Institution
MMI	Mobile Micro Insurance
MNO	Mobile Network Operators
M-Pesa	Mobile Money ‘’pesa’’
NGO	Non-Governmental Organisation
SMS	Short Message Service
USSD	Unstructured Supplementary Service Data

ABSTRACT

There has been a transformation in the way insurance services are delivered in the country. Mobile phones have enhanced rapid penetration of insurance products to mass-market and furthermore created opportunities for new business models to emerge for example Mobile Micro Insurance model. Empowered with mobile connectivity, micro insurance providers are increasingly mobile technology platforms to deliver new micro insurance products hence transforming the insurance landscape in Kenya. With great adoption of Mobile Phone Technology in Kenya, the objective of this research is to determine whether there is any effect of mobile phone technology on growth of micro insurance in Kenya. This study adopted census survey design and focussed on all insurance companies providing micro insurance in Kenya from year 2009 to year 2013. Primary data was collected by use of questionnaires to micro insurance consultants. Multiple Regression Model was used and data analyzed by use of Statistical Package for Social Science (SPSS) version 20 and descriptive statistics used to establish means and standard deviations of the responses. Correlation coefficient (R) and coefficient of determination (R²) was used to establish the nature and strength of relationship, while test of significance was undertaken by use of F test. The study revealed that mobile phone technology explains great percentage of the growth of micro insurance in Kenya. The study, recommend for regulatory authorities to come up with policies that promote mobile micro-insurance business in Kenya such as allowing co-insurance of mobile micro-insurance risks where different companies conglomerate to cover certain aspect of risks that are considered enormous to be covered by a single insurance firm. Insurers to work with regulators to ensure that they are able to seize the opportunities offered by mobile phones across the insurance value chain, such as digitization of client data and more efficient electronic payment systems and Regulation to support these opportunities while ensuring that consumers are protected and have access to appropriate insurance products that they understand and use. Insurers need to carefully design products and processes and pursue new partnerships in order to grasp the tremendous opportunity offered by mobile phones to efficiently provide valuable risk management services.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Micro insurance has attracted significant interest in the local and international front as a risk mitigation measure for low income households. According to Kenya micro insurance Landscape survey (2010) health and life insurance were identified as anchor risks upon which micro insurance can be further developed. Micro insurance sector has experienced growth in recent years due to more active interest by commercial insurers to offer micro insurance products and adopting alternative delivery channels such as utility companies, mobile phone companies and cooperatives which have provided new access points of micro insurance products. Micro insurance uptake has been shown to be positively related to educational levels (Chankova, 2008) and people familiarity with insurance (Giné, 2008). To reduce the cost associated with educating people about micro insurance, companies have embraced technological strategies to enhance efficiency, expand outreach, provide better benefits and pay claims quickly.

The micro insurance sector is currently facing several challenges that constrain its growth. Since Mobile technology has already had a huge impact on society and transformative tool for national development, it has been adopted by micro insurance providers to transform the insurance landscape in Kenya partially because a mobile phone does not have the same barriers to access as other forms of technology and is simple, inexpensive and convenient to use. Mobile phones have been a key ICT

product that has affected business practises that include: Advertisements, Marketing, and emergence of new products and new method of payments (Mbogo, 2010). Since 2012, there has been a rapid increase in the number of mobile micro insurance (MMI) products. The use of relatively low-cost mobile channels in micro insurance offers the potential to reach poorer and more remote clients, which in turn could reform the micro insurance footprint. This study will therefore help in identifying the effects of the adopted mobile technology to the growth of micro insurance.

1.1.1 Mobile Phone Technology

Traditionally mobile telephones offered voice communication but have evolved to integrate other value added services such as mobile money transfer, internet and data services and mobile banking, which has promoted operations of micro insurance through these platforms. (Nyakemwa, 2012) states that uptake of mobile phones in Kenya has been unprecedented and the most significance being rapid absorption of mobile based banking services due to continued reliance on mobile devices to execute monetary transactions. He further identifies two critical risks and impacts arising from the emergent mobile technology innovations on financial inclusion as fraudulent calls and fake text messages.

In the last decade, Kenya has undergone a transformation in Information Communication Technology (ICT) which has been the main driver of Kenya's economic growth (Ronoh, 2012). As at the end of Dec 2013, 31.309 million Kenyans up from 30.731 million in Dec 2012 used mobile telephony (Source CCK, 2013). The increased number of users has been as a result of expansion of cellular networks which have impacted positively on economic growth through emergence of new services and applications for mobile cellular services though (Machio, 2010) found

that there was no direct relationship between effect of mobile banking on inflation, savings and investment as selected macroeconomic factors . This transformation has seen invention of mobile phone-based money transfer technology like M-pesa, Airtel money and Yu cash which have gained immense use in Kenya and have significantly transformed the life of the ordinary “mwananchi”.

(Ronoh, 2012) found that Mobile money is used to transfer approximately more than US\$ 7 Billion annually (20% of GDP) and since 2000, the sector has out-performed all other sectors, growing on average at 20% annually. The financial services sector has been at the forefront in adopting technology over the last decade but insurance industry was slow in the adopting of technology though technology provides a big scope and most important driver for insurance product innovation and growth.

The insurance industry has embraced modern information and communication technology to match the simplicity of micro-insurance products with simpler methods of delivery by partnering with MNOs to provide insurance products therefore reaching a wide coverage quickly for example; consumers can obtain coverage using the short messaging service (SMS) of their mobile phones (Camilo &Tellez, 2012) .

1.1.2 Micro Insurance Growth

Micro-insurance is an insurance that operates by risk-pooling, is financed through regular premiums and is tailored to the poor who would otherwise not be able to take out insurance (Churchill, 2006). It is also defined as insurance that is accessed by or accessible to the low-income population, provided by a variety of different entities, but run in accordance with generally accepted insurance practices (Association of Insurance Supervisors, 2007). Micro-insurance forms part of the broader insurance market and is differentiated by its target of low-income market segment. International

experience has shown that micro insurance can play an important role in helping the poor manage their risks by protecting the assets and incomes of low-income households when financial losses occur and prevent them from falling further into poverty.

The last decade has experienced strong growth in micro-insurance, especially in Asia, Africa and, increasingly, Latin America. India alone is currently estimated to account for 60 percent of all the individuals covered by micro-insurance worldwide. Overall, market penetration remains relatively small therefore there remains enormous growth potential in micro insurance especially in emerging economies. The total insurance penetration rate in Kenya accounts for 3% of the GDP. Of the 16 million insurable Kenyans, 12 million are in the micro insurance sector and in excess of 12 million Kenyans earn between \$2 and \$10 per day and form a strategic and core market segment for Micro insurance (Cenfri, Kenya micro insurance landscape, 2010). The income factor becomes important when considering the delivery of low-income insurance products in an environment where the primary restriction on market potential is income availability.

Micro insurance is an emerging trend in the Kenyan market and its regulation was encompassed by Finance Act (2012) to existing insurance law where micro insurance is recognized as a class of business. Insurance Regulatory Authority (IRA) is developing micro- insurance guidelines perceived as key to protecting low-income segment of the population, particularly those working in the informal economy as its benefits in terms of poverty alleviation mainly among low-income consumer is enormous. Micro insurance is currently being provided by a variety of institutions

with products designed by commercial insurance and fully funded by premiums. In spite of these developments in micro insurance, the country is yet to have a separate definition for micro- insurance and its regulation has not been provided for adequately in most existing insurance laws. As a result, only a few of insurers are seeking to enter the sub-sector because the current regulatory regime doesn't make sufficient concessions to support the business. The most common form of micro-insurance is credit life as micro-lenders add life insurance products to their loans as lending infrastructure already in place and administrative costs for the life insurance policies are minimal hence making it the most offered micro insurance product.

The number of people insured by micro insurance has increased due to various factors that have contributed to its growth such as: urbanization and economic growth in the country as the large, low-income population has increased the purchasing power of this market segment, Government involvement particularly by anchoring micro insurance in insurance law, insurance companies have formed partnerships with local microfinance institutions, governments, agents, mobile networks, health service providers and non Governmental Organizations (NGO) allowing the micro insurance to be distributed to a much more geographically diverse consumer base than before and finally expansion in use of technology, namely the widespread use of mobile phones has contributed to its expansion. Even with the sector's recent expansion, micro insurance has experienced a variety of challenges such as poor people inability to afford insurance, lack of education about the products, high level of claims, moral hazard and anti-selection.

The insurance industry is subject to laws and regulations as defined by various states. As part of national socio-economic strategies, governments and regulators are raising

the awareness and benefits of micro insurance amongst poorer population and providing the framework within which micro-insurance can operate commercially and efficiently. As a result, in a number of countries micro-insurance regulations are being introduced that lower capital requirements for micro-insurers compared to traditional regulatory frameworks. They also simplify compliance, relax constraints on distribution channels and minimize licensing and examination requirements for intermediaries (Mutua, 2008).

In the past, insurance regulations in Kenya have been alleged to create legal barriers to the development of insurance through statutory restrictions. However, over the last ten years there has been a deliberate effort by Government to review and improve insurance regulations with the aim of creating an environment that supports growth and development. As a result, companies have been encouraged to develop innovative products that ride on leeway provided within the reviewed law.

For instance, through the Finance Act (2012), which introduced Micro insurance as a class of business, a number of benefits were created which included: ease of reporting for this class of business so as to provide crucial statistics that will inform critical policy decisions and relaxation in the mode of premium payment for this class of business. Also, there is a move toward risk-based supervision which introduced some flexibility in terms of capital requirements while creating allowance for companies to accommodate risks based on their capacity as individual financial entities consequently creating some flexibility in pricing of insurance products offered by insurers.

1.1.3 Effect of Mobile Phone Technology on Growth of Micro - Insurance

Micro insurance is a rapidly evolving field with great potential to help low-income households and reduce their vulnerability to risks unfortunately the cost of underwriting, selling, and administering claims does not decrease in proportion to the value of the policy hence insurers find it challenging to provide viable products for the low-income market using traditional channels and processes since the conventional tied agency model cannot enable the industry fully penetrate the massive low income market.

Lack of distribution infrastructure, such as roads and payment platforms, has been a major barrier to the spread of micro insurance, with significant amount of time, effort and money required to collect and transfer information and administers products manually. Mobile phone provides a way of addressing these challenges by leveraging on infrastructure therefore making processes more efficient across the micro insurance value chain by reducing turnaround times, lowering costs, and bridging geographical distances (Prashad, Saunders, and Dalal, 2013).

Insurance companies have tapped this resource and led to significant improvement in the service standards within the insurance industry. The simplest of these is premium and claim settlement for both life and general insurance companies. For example, when premium is due, a policyholder is able to send his/her premium to an insurance company directly through assigned business number from any location thereby addressing challenges of efficiency, distribution and coverage which has enabled inclusion of the middle and bottom of the pyramid into insurance.

The process of enrolment and claims previously required forms to be filled in and documents and photographs to be collected and sent to the insurer's office for processing these processes are now done through mobile phones, which has reduced turnaround times drastically. Mobile-phone-based processes make it possible to gain supply side efficiency by insurers leading to lower operational costs, reduced inefficiencies, and do low-value high-volume transactions to new low income customers in a more viable financial way leading to micro insurance companies' growth in profits. The partnership between micro insurers and mobile network operators have made improvements to traditional insurance product distribution lines by increasing insurance coverage to mobile phone subscribers and through the use of Mobile network operators' agents network (Prashad *et al*, 2013).

Kenya has a reputation for financial sector innovation. Although there has been some innovation in the insurance space, this sector remains largely under-developed and has not kept pace with the rapid expansion of banking and payment services. Given the under-developed nature of the insurance sector, micro insurance offers Kenyan insurance companies the opportunity to grow the market and serve more people. (Dalal *et al*, 2014) found out that there can be value from micro insurance, but that value is as limited and imperfect as the micro insurance products themselves.

Micro insurance coverage has positive impacts on financial protection, reduced vulnerability and improved health. Even the most valuable micro insurance products play only a limited role in coping with risk. Given the many other tools available to low-income households, this limited role seems to be the one that micro insurance is best suited to play. (Rego and Herndorf, 2011) shows that there is tremendous opportunity in providing low-cost high-value insurance policies with a focus on

scalability and efficient processes and how access to these customer segments is being unlocked through the changing technology landscape. (Gerelle and Berende, 2010) compiled an inventory of information technologies that are or could be applicable in the extension of insurance services to low-income households in the areas of customer interface, transaction processing, data analysis & processing and systems view. Continued innovation in the micro insurance sector, combined with revolution in payment systems and a supportive regulatory environment, provide a firm foundation for the development of the Kenyan micro insurance market

1.1.4 Insurance Industry in Kenya

Kenya has 49 licensed insurance companies (IRA, 2013). Insurance industry in Kenya is regulated by insurance regulatory authority (IRA), a semi-autonomous regulator set up in year 2008. Previously, IRA was a department of the Ministry of Finance which administered the insurance industry and which was headed by the commissioner of insurance. The industry operates under an umbrella body, the Association of Kenya Insurers (AKI) which was established in 1987 that pulls membership from any registered insurance company and whose main objective is to promote prudent business practices, create awareness among the public and accelerate the growth of insurance business in Kenya. At the top of the insurance sector are two reinsurance companies namely Kenya Reinsurance Corporation (Kenya Re) and East African Reinsurance Company.

(ILO, 2009) estimated that in Africa only 14.7 million people had access to micro insurance, 1.35 million of them in Kenya. With access to insurance especially micro insurance being limited, Kenya like many other developing countries identified micro insurance as key enabler for enhancing financial inclusion and mitigating risks. The regulatory scheme for micro insurance in Kenya, which includes all legislation

pertaining to the delivery of insurance, constitutes several Acts and their Regulations beyond the Insurance Act. The Banking Act, the micro finance Act, the Cooperative Societies Act, all make part of regulatory scheme and facilitate in determining the larger regulatory environment for micro insurance. Micro insurance in Kenya is regulated under the insurance Act (cap 487) as miscellaneous class of business meaning that micro insurance is regulated under the conventional insurance law which does not sufficiently provide for insurance needs of the low income people. The growth and success of Micro finance which has proved its efficiency in provision of savings and credit services to low income households and micro enterprises before the inclusion of micro insurance has created delivery channel to help regulated insurers target the low income market efficiently.

Regulated insurers that provide micro insurance in Kenya include Kenya Orient insurance Company, Pan Africa life Assurance limited, CFC Life, CIC, Britam, Pioneer, UAP, APA, Madison Insurance Kenya Limited, Heritage insurance company, Apollo life assurance, AIG, Jubilee, Monarch and ICEA Lions insurance company.

1.2. Research Problem

There has been a transformation in the last five years in the way insurance services are delivered in the country. Mobile phones have enhanced rapid penetration of insurance products to mass-market and furthermore created opportunities for new business models to emerge for example Mobile Micro Insurance model. Mobile technology platform forms a critical component of mobile micro insurance as it enables the interaction of data between the MNO and the insurer.

Mobile technology back-end system helps in automation of processes and allows the use of the mobile phones to enroll clients, collect payments, communicate with service centers and pay claims. Empowered with mobile connectivity, micro insurance providers are increasingly utilizing existing retail infrastructure platforms to deliver new micro insurance products by migrating sales and distribution functions outside of traditional agents through mobile-enabled field agents, or even self-service via the mobile. Since Mobile technology has already had a huge impact on society and transformative tool for national development, it has been adopted by micro insurance providers to transform the insurance landscape in Kenya partially because a mobile phone does not have the same barriers to access as other forms of technology and is simple, inexpensive and convenient to use.

Since year 2012, there has been a rapid increase in the number of mobile micro insurance (MMI) products. The use of relatively low-cost mobile channels in micro insurance offers the potential to reach poorer and more remote clients, which in turn could reform the micro insurance footprint in Kenya. Many insurance companies have adopted mobile phone technology in their operations in Kenya to mention a few Pan Africa Life Insurance Company in conjunction with Airtel and Micro-ensure provide a micro-insurance product dubbed “Bima Mkononi” which covers life.

Several studies have been done on mobile technology. (Mangwana, 2012) conducted a case study on micro insurance product through in-depth interviews to determine the growth ratio, renewal rate and net income ratio of Biashara Salama. (Kasyoki, 2012) in the study about factors affecting adoption of mobile phone banking by customers of commercial banks in Kenya, found out that the respondents used mobile banking

because they found it cheap, safe and reliable to a greater extent. (Amai, 2013) notes that an effective mobile advertising is a combination of goals, statistics, creativity and an intuitive knowledge of the mobile consumer.

(Barasa, 2013) indicates positive effect of MMU on financial performance of NGO's that have adopted mobile money in their financial performance. (Njuguna, 2013) discusses the strategies that Kenyan insurance companies are using to mitigate the risks and discerns creative strategies to minimize them.

(Prashad, Saunders, Dalal ,2013) provides an overview of how insurers are making use of mobile phones and forming partnerships with MNOs to reach scale and increase efficiency. With the enormous adoption of mobile phone technology in Kenya and across the world, the question is whether there is any effect of mobile phone technology on growth of micro insurance in Kenya?

1.3 Objective of the Study

To establish the effect of mobile phone technology on the growth of micro insurance in Kenya

1.4 Value of the Study

This study will provide a source of reference, literature review and basis upon which further studies can be developed, increase knowledge of relevance and inform action to policy makers which will guide them into making conclusions on best and favourable policies and strategies that will promote mobile micro insurance.

The study will guide the decision of commercial insurers on incorporating the concept of mobile micro insurance into their businesses and the benefits verses challenges they are likely to encounter. Also the study will contribute to existing body of knowledge by adding a new frontier on effects of the mobile technology to growth of micro insurance in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter has reviewed literature from past studies that is relevant to this study with intention of highlighting research work done by other researchers, scholars and other secondary data available on micro insurance. The literature review will help in building a conceptual framework which is anticipated to guide the study.

2.2 Theoretical Review

Theoretical review will explain collective risk and agency theories in context of micro insurance and various models used to deliver micro insurance.

2.2.1 Collective Risk Theory

This theory was formulated by Filip Lundberg (1903). Due to regulatory emphasis on insurance company solvency, actuaries built quantitative models which use mathematical models to describe an insurer's vulnerability to insolvency ruin. The body of theory that resulted is known as the collective theory of risk or ruin/risk theory. The model describes an insurance company that experiences two opposing cash flows: incoming cash premiums and outgoing claims.

The key objective of the theory is to determine the probability that the insurer's surplus level eventually falls below zero thereby making the firm bankrupt. This theory is important to insurance firms since the key goal of insurance regulation is solvency which is the difficulty faced by the policy holders in establishing financial

soundness of insurance firms (Munch & Smallwood, 1981). This theory helps insurance companies' management in incorporating ruin probabilities into their decision making.

2.2.2 Agency Theory

The theory was developed by Jensen and Meckling (1976). This theory defines set of relationship under which principal engage agent to perform some service on their behalf. (Mayers and Smith, 1986) note that regardless of whether a firm is organized as a stock or mutual company its characterized by three key functions which are allocated across various claim holders these functions are; the ownership/risk bearing function, managerial function and customer /policy holder function. In the context of an insurance operation the owner is the claimant to the residual cash flows of the firm hence he is the risk bearer since he guarantees the payoffs promised under the firm's contracts with its managers and customers.

2.2.3 Partner Agent Model

In this model micro insurance is provided through a partnership between micro insurance partner such as MFI and insurance company. The insurance company provide actuarial, financial, and claims processing expertise and capital required for initial investments while the partner is responsible for delivery and marketing of products to the clients through distribution network already established for its other financial services. Under this arrangement micro insurance schemes benefit from limited risk since insurers absorb the risk, though they are disadvantaged in their limited control. (Radermacher & Dror, 2006)

2.2.4 Full Service Model

The micro insurance is fully responsible for both design and delivery of products to clients, sales, services and claims assessment. The Micro insurance provider works with external partners to provide the service. The advantage of this model is full control by the micro insurance provider and disadvantage is high risk because it's not shared (Radermacher & Dror, 2006).

2.2.5 Provider-Driven Model

The service provider and the micro insurer are the same. Provider is responsible for all operations of the service that entail design, delivery and service. Advantage is high amount of control while disadvantage is limitation in products and services (Radermacher & Dror, 2006).

2.2.6 Mutual Model or Community Model

(Radermacher & Dror, 2006) states that under these model operations are managed and owned by policy holders or the clients with external providers offering the service. Under this arrangement market products are more easily designed and effectively marketed though it has a small scope of operations.

2.3 Determinants of Growth of Micro Insurance

There are several factors that determine growth of micro insurance. These are discussed below under four main categories; Economic factors, Structural factors, Social cultural factors and Demographic factors

2.3.1 Economic Factors

Price of insurance including transaction costs, wealth and income of the clients determine growth in micro insurance. Transaction costs are important barriers to enrolment in micro insurance hence low take-up rates have been associated with high transaction costs. Several studies show a positive relationship between wealth and micro insurance purchase. The basic premise being that wealth provides higher levels of liquidity and/or access to credit so that the purchase of insurance is feasible. (Gine et al, 2008) find that take-up rates for rainfall insurance in rural India are higher among wealthier households. Similarly, in a field experiment in India (Cole et al, 2011) found that wealthier households are more likely to purchase rainfall insurance than non wealthy households. Within micro insurance markets, greater levels of wealth provide a means to pay an insurance premium. Lower-income individuals may actually have a greater need for insurance than the wealthier because of the relative influence of the same type of shock, but those with lower incomes may suffer resource constraints that make insurance purchase infeasible hence a key determining factor to growth of micro insurance.

2.3.2 Social and Cultural Factors

Some social cultural factors that affect growth of micro insurance are risk aversion, trust and peer effect, religion and financial literacy. More risk-averse households are less likely to purchase insurance indicating risk aversion and insurance purchase are negatively related, furthermore households view insurance as risky or that potential insured have a limited understanding of the product. Factors such as price uncertainty associated with micro insurance and the possibility of non-performance of the micro insurance contract due to contract exclusions or insurer bankruptcy, cause individuals to view micro insurance as risky hence determining its growth. Religion sometimes is

considered to be related to risk attitudes as well as to a sense of cohesion within a community and may tend to influence the uptake of micro insurance products. Financial literacy is expected to increase insurance demand due to understanding of basic financial concepts such as interest rate compounding, inflation, and risk diversification. (Cole et al, 2011) found that demand is higher among households with higher financial literacy.

2.3.3 Structural Factors

These factors look into the crowding out issue between formal and informal insurance mechanisms in micro insurance market development. To the extent that well-functioning informal systems exist, caution is required in introducing insurance schemes that could be perceived as substitutes. Developing a deeper understanding of the factors that foster success and prevent failure of informal systems could make future micro insurance growth more sustainable. Quality of expected micro insurance service also affects growth especially in health insurance. Decision to enroll in health insurance is closely linked to the quality of the health facilities and poor-quality health care is an important reason for people not to join hence contributing to low growth. Past shocks increase the probability of using micro insurance as people are more likely to purchase insurance right after a loss.

2.3.4 Personal and Demographic Factors

These factors include age and gender. In life and health insurance, age likely represents loss exposure and as a result many micro insurance providers provide products to their clients until certain age mostly seventy years. Past this age exposure to loss is high due to high possibility of claims among clients in this age bracket and hence premiums are increased or the micro insurance cover ceases. Due to this age factor micro insurance mostly experiences growth up to a certain age after which significant drops in growth is realised. Some studies find lower risk tolerance by women than men, even though the

cause is unclear either theoretically or empirically. For example, (Cohen and Eisenhower, 2007) find greater risk aversion among women. (Gandolfi and Miners, 1996) however observe that differences in purchase decisions of men and women depend on women's labour force participation. The lower risk tolerance translates into greater levels of micro insurance purchase hence growth.

2.4 Empirical Review

Various researches have been done on micro insurance. (Mangwana, 2012) evaluated sustainability of Biashara Salama Micro Insurance Policy at CIC Insurance Group Limited through a case study which employed quantitative data collected from key informants on the product through in-depth interviews to determine the growth ratio, renewal rate and net income ratio of Biashara Salama. Quantitative statistics were collected to determine growth, coverage, renewal rate, incurred claims, incurred expense and net income ratios across the different periods. The findings from this research study affirm the existing need for micro insurance products as the number of customers increases, an indication of the constantly increasing need for insurance among the people at the bottom of the economic pyramid it also noted that net income is a product of the total collected premiums less the expenses. This study has focused on an area that other studies have not addressed; the effect of mobile technology to growth of micro insurance in Kenya.

(Kasyoki, 2012) employed a descriptive research design in which the population of the study were customers of all the commercial banks in Kenya. The study used a sample size of 60 customers to collect data using research questionnaires and the collected data was coded and analysed using means and standard deviations. The

analysed data was presented in form of tables, pie charts and graphs. Study found out that the respondents used mobile banking because they found it cheap, safe and reliable to a greater extent. Respondent's colleagues, friends and family influenced the respondents to adopt and use mobile banking while the influence of the media on the adoption of mobile banking is not clear.

Further the study found out that mobile banking has a range of services, is convenient in doing bank transactions and access to the bank service, saves time and has a good connection speed. The study recommends that banks, service developers and software engineers should focus on the perceived usefulness, perceived ease of use, relative advantages and perceived risks of their mobile phone banking services and products by developing better functions in terms of flexibility, security and accessibility features to enhance consumer's confidence to adopt mobile banking services. (Njuguna, 2013) discusses the strategies that Kenyan insurance companies are using to mitigate the risks and discerns creative strategies to minimize them. Purposive sampling was used to select 8 companies that offer micro-insurance products in Kenya, from which 49 key informants responded to the survey. Visual binning approach was used to describe the data, while statistical tests of correlation and association were carried out by use of Pearson Correlations and Chi-Square tests.

The study singled out the most ubiquitous risks facing micro-insurance providers as; dis-economies of scale resulting from low penetration, limited distribution channels, correlation risks and rigid regulatory framework. The strategies being used to counter the risks include; use of technology to lower administration costs, control of moral hazard and adverse selection, thorough scrutiny of claims, development of risk

measurement models and continuous monitoring of the clients.

(Prashad, Saunders and Dalal, 2013) provides an overview of how insurers are making use of mobile phones and forming partnerships with MNOs to reach scale and increase efficiency. The study is based on a review of literature and a selection of 13 schemes that are using mobile phones. Further it presents several challenges that insurer and mobile network operators are likely to face as they venture into mobile micro insurance. The findings reveal good practices and ways of enabling scale, increasing efficiency, and enhancing the client experience through better communication and data management.

(Amai, 2013) sought to find out the perceived effectiveness of mobile advertising to consumers as a promotional tool in Kenya. The research design for the study was a descriptive design. The Target population consisted of customers of the four mobile operators in Nairobi. A total sample size of 200 Individual customers who were subscribers from each of the four mobile operators was used. A sample of 50 subscribers from all the four mobile subscribers in Nairobi namely Safaricom, Airtel, Orange and Yu Mobile was used. Questionnaires which were self-administered contained both structured and unstructured questions. Data was analysed using descriptive statistics.

The study established that involvement, feelings/interest to product, attitude, satisfaction, confidentiality, advert source, location & time, message appeal, risk factors, coverage motivation, permission/legality and interactivity affect mobile advertising effectiveness. The study recommended that there is need to customize mobile advertisements to particular customer segments or even specific individuals based on available information such as demographics, past behaviours, and interests.

(Barasa, 2013) adopted exploratory research design to investigate the effect of Mobile Money uptake (MMU) on the financial performance of NGO 's in Kenya and to investigate this relationship, quantitative research approach was employed. To ensure a more complete approach to empirical research, longitudinal data were collected in a sequence so as to track the magnitude of change that would have taken place. The instruments used included the use of structured questionnaires and interviews. Interviews were conducted to give in — depth information which was omitted by the questionnaire. The survey was administered on 30 respondents out of 50 members of the national and international NGO, s in Kenya. Data was subjected to exploratory analysis through descriptive and correlation procedures. The study notes positive effect of MMU on financial performance of NGO's that have adopted mobile money in their financial performance and significant positive effect on, improved customer engagement and satisfaction, compliance with donor regulations, efficiency and effectiveness and most importantly reduced fiscal risk status. The study recommends that donors should formulate key policy to require their funds recipients adopt MMU as the appropriate way of undertakings funds disbursements.

2.5 Summary of Literature Review

The model used in predicting risk of ruin in Collective risk theory does not explain how to predict risks brought about by adoption of technology hence the model cannot be used to predict the probability of occurrence of the risks associated with adoption of mobile technology in insurance thus a gap exists as micro insurance providers need to develop risk prediction models and how to mitigate risks arising from micro insurance business. Agency theory does not explain the weights of risk carried by each stakeholder in the context of micro insurance chain hence a gap exists that need

to be addressed by necessary regulation to avoid over exposure to policy holders as well as providers. The reviewed empirical studies have not adequately covered the effects of adopted technological innovations by companies on their operations and the associated risks of adopting such technologies and how those risks can be mitigated and the hence need for more studies on technological aspects of firms operation

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the general methodology of carrying out the research. It included the research design, target population and data collection instruments, procedures and analysis.

3.2 Research Design

Research design is the plan and structure of investigation so as to answer the research question (Cooper and Schindler, 2008). (Mugenda and Mugenda, 2003) define descriptive research as a process of collecting data in order to answer questions concerning the current status of the subjects in a study. This study used descriptive research design in the form of a census survey.

Descriptive research was appropriate for this study since detailed information about small subgroups within the population is more likely to be collected. A census is a count of all the elements in a population (Cooper and Schindler 2003). A census survey was appropriate due to the small number of insurance companies providing micro insurance and provides a true measure of the population as there is no sampling error.

3.3 Target Population

Target population is the members of a real or hypothetical set of people, events or objects the researcher wishes to generalize the results of the research (Mugenda and Mugenda, 2003). The population of interest in this study entailed conducting a census survey of all the fifteen insurance companies providing micro insurance as at 31st December 2013 (see appendix 1).

3.4 Data Collection

The data was collected by administering unstructured questionnaires. The questionnaire included open-ended questions to micro insurance consultants. A questionnaire is a research instrument that gathers data over a large sample (Kombo and Trop, 2006). This method was appropriate because it enabled researcher to collect a lot of information within a very short time. At the same time the respondents feel free to note down their responses without any fear since they are not being observed hence ensures confidentiality.

There was one questionnaire for all micro insurance consultants and collected data for year 2009 to year 2013. The questionnaire was taken to the selected micro insurance companies by the researcher and issued to the respective micro insurance consultants who were requested to fill them within an agreed period.

3.4.1 Data Validity and Reliability

Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research result and reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated tests when administered a number of times (Mugenda and Mugenda, 1999). To ensure validity and reliability of

information collected Secondary sources such as, annual reports, company websites and press release materials was incorporated.

3.5 Data Analysis

After cleaning and editing all the collected data, analysis was done using quantitative approaches. The data was analyzed through the use of descriptive statistics where the means and standard deviations of the responses was established and the results presented in form of tables which helped in describing the data. Data analysis was conducted through Statistical Package for Social Science (SPSS) version 20.

3.5.1 Analytical Model

The study used Multiple Regression Model to analyse the effect of Mobile Phone Technology on the growth of Micro Insurance in Kenya. The model was used in the study because it helped in understanding how a value of the dependent variable changes when one value of independent variable change, while other independent variables are held constant and also the model helped to establish relationship between the dependent variable and independent variable and the form of the relationship.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where;

Y = Total amount of premium paid by clients covered by micro insurance policies

α = constant term

β = Beta coefficient of the independent variables i

X_1 = Annual number of clients enrolled through mobile phone technology

X_2 = Annual amount of clients' premium paid through mobile phone technology

X_3 = Annual amount of clients' claims paid through mobile phone technology

X_4 = Annual amount of agents' commission paid through mobile phone technology

X_5 = Annual number of products that are distributed only through mobile phone technology

ε = error term

3.5.2 Test of Significance

Given that this is a descriptive design, data analysis of the effect of mobile phone technology on the growth of micro insurance was done using correlation coefficient (R) and coefficient of determination (R^2) to establish the nature and strength of relationship, while test of significance was undertaken by use of F test to analyze the magnitude of the relationship to indicate whether joint contribution of the independent variables was significant in predicting the dependent variable.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings of the study output which was carried out for a period of five years from the year 2009 to 2013 among all Insurance Companies providing Micro insurance in Kenya. The averages of the all the variables for the five years were taken and then analyzed using SPSS 20. The study findings are presented on the effect of mobile technology on the growth of micro insurance in Kenya. According to the data, ten (10) out of the fifteen (15) questionnaires administered were returned which makes a response rate of 66.67%.

4.2 Regression Analysis

After analysis of data, the model summary below was established

Table 4.1 Model summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923 ^a	.851	.666	259.68222

Source: Research Findings

a. Predictors: (constant), annual number of products distributed through mobile phone technology, annual amount of premium paid through mobile phone (million), annual amount of clients claim paid through mobile phone(million), annual number of customers enrolled through mobile phone (thousand), annual amount of agents commission paid through mobile phone(million)

The table 4.1 above provides the regression model summary whereby it gives the value of R, R², adjusted R² and the standard error. These values show how well the regression model fits the data analyzed.

4.3 Descriptive Statistics

The descriptive statistics are shown by the table below

Table 4.2 Descriptive Statistics

	Mean	Std. Deviation	N
Amount of premium paid by micro insurance policy holders	758.316000	449.0928134	10
Customers enrolled through mobile phone	10.591400	14.2216893	10
premium paid through mobile phone	89.696600	103.0437712	10
Clients Claims paid through mobile phone	52.921200	89.7980942	10
Agents commission paid through mobile phone	80.347000	100.3964473	10
Products distributed through mobile phone	1.040000	.5399588	10

Source: Research Findings

It is observed that the total number of response data analyzed (n) is 10 Micro insurance Companies for each of the five variables included in the analysis. The mean of the data is indicated in the mean column.

4.4 Coefficients

The regression model coefficients derived from the analysis are shown in the following table

Table 4.3 Coefficients

Coefficients							
Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	416.978	335.082		1.244	.281	-513.360	1347.315
Customers enrolled through mobile phone	-21.659	28.212	-.686	-.768	.485	-99.987	56.670
premium paid through mobile phone	5.192	1.790	1.191	2.900	.044	.222	10.162
Clients Claims paid through mobile phone	-7.169	5.225	-1.433	-1.372	.242	-21.675	7.337
Agents commission paid through mobile phone	6.934	6.433	1.550	1.078	.342	-10.927	24.795
Products distributed through mobile phone	-69.926	340.822	-.084	-.205	.847	-1016.201	876.348

a. Dependent Variable: Amount of premium paid by micro insurance policy holders

Source: Research Findings

From the above table the following equation is derived:

$$Y = 416.978 - 21.659X_1 + 5.192X_2 - 7.169X_3 + 6.934X_4 - 69.926X_5$$

Y = Total micro insurance premium paid

X₁ = Customers enrolled through mobile phone

X₂ = premiums paid through mobile phone

X₃ = Clients Claims paid through mobile phone

X₄ = Agents commission paid through mobile phone

X₅ = Products distributed through mobile phone

It is observed that four independent variables are not statistically significant. One independent variable X_2 representing premiums paid through mobile phone was however statistically significant since $P = (0.044) < 0.05$ as indicated by the “sig” column. It is also noted that the standardized and the un-standardized coefficients for the same four variables are both not statistically significant as indicated by their t and sig column. The constant indicates that even without mobile phone technology there is some level of micro insurance growth in Kenya. The model obtained indicates that mobile phone technology contributed to a large percentage in the growth of micro insurance in Kenya. There are other variables that account for the smaller proportion of the percentage in growth of micro insurance in Kenya. Growth of micro insurance is influenced to a small extent by other factors besides mobile phone technology. The mobile technology can be considered as major effect on growth of micro insurance in Kenya.

Table 4.4 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1545419.770	5	309083.954	4.583	.083 ^b
	Residual	269739.425	4	67434.856		
	Total	1815159.195	9			

Source: Research Findings

- a. Dependent Variable: Premium paid by Micro insurance policy holders
- b. Predictors: (Constant), Products distributed through mobile phone, premium paid through mobile phone, Clients Claims paid through mobile phone, Customers

enrolled through mobile phone, Agents commission paid through mobile phone.

The analysis of variance table above shows statistical insignificance of independent variables to predict the dependent variable. The F ratio tests whether the regression model is fit for the data.

4.5 Interpretation of the Findings

Table 4.1 the R column represents the multiple correlation coefficients which measures the quality of the prediction of dependent variable. In this case the value of R is 0.923 which shows a strong level of prediction. The R^2 which is the coefficient of determination is 0.851 indicating that 85.1% of independent variables explain the variability of growth of micro insurance in Kenya, while 14.9% is not explained by the model which indicates that growth of micro insurance in Kenya is affected by those factors.

Table 4.2 the mean for total premium paid by micro insurance policy holders is 758.316 with a Std. deviation of 449.092 which is high meaning that the data is not closely clustered within the mean. The same applies to the other variables with the lowest standard deviation being 0.540 for products distributed through mobile phone.

The model in table 4.3, it is observed that there is a negative relationship between the growth of micro insurance and growth in Customers enrolled through mobile phone, Clients Claims paid through mobile phone and Products distributed through mobile phone meaning as growth in micro insurance increases by one unit, the stated independent variables will decrease by -21.659 , -7.169 and -69.926 respectively. However, there is a positive relationship between the premiums paid through mobile phone, agents' commission paid through mobile phone and growth in micro insurance

as indicated by the coefficients of 5.192 and 6.934 respectively meaning that as premiums paid through mobile phone and agents' commission paid through mobile phone increases the growth in micro insurance will increase by 5.192 and 6.934 respectively.

In table 4.4 it is observed that F critical at 5% level of significance was 4.583, and P (0.083) $>$ 0.05 meaning that there is no statistical significant effect of the growth in Products distributed through mobile phone, premium paid through mobile phone, Clients Claims paid through mobile phone, Customers enrolled through mobile phone, Agents commission paid through mobile phone to the growth of micro insurance in Kenya

Comparing the study results with other study results, (Ngii, 2013) found that mobile phone technology had least effect on financial deepening within banking industry in Kenya hence contrasting results obtained in this study. (Litondo, 2009) found a strong effect of mobile phone on employment among MSEs within the informal sector consequently finding similar results about effect of the mobile phone on the dependent variable.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMEDATIONS

5.1 Introduction

This chapter summarizes the findings from chapter four, conclusions, limitations and recommendations based on the objectives of the study i.e. to determine the effect of mobile phone technology of the growth of Micro Insurance in Kenya.

5.2 Summary

The objective of the study was to determine the effect of Mobile Phone Technology to the Growth of Micro insurance in Kenya and it was found from the analysis in chapter four that there is a strong level of prediction of dependent variable by independent variable as indicated by R of 0.923 though not statistically significant. The R^2 of 0.851 indicate that 85.1% of independent variables explain the variability of growth of micro insurance in Kenya, while 14.9% is not explained by the model which indicates that growth of micro insurance in Kenya is strongly affected by those factors.

5.3 Conclusion

It can therefore be concluded that mobile technology does affect growth of micro insurance but not statistically significant. It can also be concluded that there are other factors which affect the growth of micro insurance in Kenya other than Mobile phone technology which may include micro insurance price, policyholder income, policy payout (or, perceived payout), and social and cultural factors. These factors should be included in the other studies relating to growth of micro insurance in Kenya.

5.4 Policy Recommendations

The study, recommend for regulatory authorities to come up with policies that promote mobile micro-insurance business in Kenya such as allowing co-insurance of mobile micro-insurance risks where different companies conglomerate to cover certain aspect of risks that are considered enormous to be covered by a single insurance firm and this will enable many firms to offer mobile micro insurance in large scale as risks will be shared hence enabling growth.

Insurers to work with regulators to ensure that they are able to seize the opportunities offered by mobile phones across the insurance value chain, such as digitization of client data and more efficient electronic payment systems. Regulation to support these opportunities while ensuring that consumers are protected and have access to appropriate insurance products that they understand and use. Insurers need to carefully design products and processes and pursue new partnerships in order to grasp the tremendous opportunity offered by mobile phones to efficiently provide valuable risk management services to all.

The study further recommends creating a micro insurance company license which will require lower regulatory requirements than conventional insurance licenses and creating a micro insurance agent category that does not need to be licensed by the Authority and has lower training requirements. Both the company and agent will only be able to sell approved micro insurance products hence lowering the cost of selling micro insurance products and increase the accessibility and customer value of insurance in the Kenyan market.

5.5 Limitations of the Study

There were several limitations which were encountered in this study that hindered access to information sought by the study. The major limitation encountered was reluctance by respondents approached in giving information fearing that the information sought would be used by their rivals or perhaps the researcher was an investigator of their corporate actions that resulted to some companies failing to respond to the questionnaires at all. The researcher handled the problem by carrying with him an introduction letter from the University and assured respondents that the information they gave would be treated confidentially and it was to be used purely for academic purposes and if need be the researcher to sign non disclosure agreement with the company. More over the Companies were given unique number on the questionnaire other than their real names which was used to identify them.

The researcher also experienced delayed feedback from the respondents on the basis that there is need for approval of filling the questionnaires from senior management and also due to strict working schedules and limited time available to fill the questionnaire. The researcher sought to win management approval for the study through booking appointment with the respective senior personnel supposed to approve the study and explaining to them the relevance and support I intend them to offer for the study.

Another limitation for the study included the short period which mobile technology has been integrated to micro insurance hence could not give a long trend for analysis. Many companies integrated micro insurance to Mobile technology in year 2011 which may not give a clear picture of the relationship as not all micro insurance companies adopted it at ago in year 2009 being the first year of consideration in the study.

5.6 Recommendations for Further Research

Various stakeholders in this industry should strive to carry out researches in other areas in order to be able to identify what are other major factors that affect micro insurance in Kenya for example examining the effect of other variables different from those which have been used in this study such as micro insurance price, policyholder income, policy payout, and social cultural factors on the growth of micro insurance in Kenya.

Secondly further studies should be done to identify challenges faced in the design, distribution and administration of micro insurance products and how these challenges can be addressed. Similarly studies focusing on the effectiveness of current legislation on promotion of the growth of micro insurance in Kenya should be carried out. Last but not least research on the effectiveness of risk management strategies employed by micro insurance providers to mitigate loss arising from micro insurance business is also recommended.

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APPENDICES

Appendix I: Letter of Introduction


UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MSC FINANCE PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE... 18/07/2014

TO WHOM IT MAY CONCERN

The bearer of this letter... Thomas Chispis Kamukia Gikento


Registration No... D63/76060/2012


is a bona fide continuing student in the Master of Science (Finance) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


18 JUL 2014
P.O. Box 30197 - 00100, NAIROBI


PATRICK NYABUTO
FOR: MSC FINANCE CO-ORDINATOR
SCHOOL OF BUSINESS

Appendix II: Data Collection Form

PART ONE: GENERAL QUESTIONS

1) Name of insurance Company

.....

2) Name of the respondent

.....

3) Date of collecting information

PART TWO: MOBILE TECHNOLOGY AND MICRO INSURANCE

1) What was the total annual number of clients enrolled through mobile phone technology?

Year 2010

Year 2011

Year 2012

Year 2013

2) What annual amount of clients' premium was paid through mobile phone technology?

Year 2010

Year 2011

Year 2012

Year 2013

3) What annual amount of clients' claims was paid through mobile phone technology?

Year 2010

Year 2011

Year 2012

Year 2013

4)) What annual amount of agents' commission was paid through mobile phone technology?

Year 2010

Year 2011

Year 2012

Year 2013

5) What annual number of products was distributed through mobile phone technology only?

Year 2010

Year 2011

Year 2012

Year 2013

6) What is the total amount of premium paid by clients covered by micro insurance policies as at the end of the following years?

Year 2010

Year 2011

Year 2012

Year 2013

Thank you for your participation.

**Appendix III: List of Micro Insurance Providers in Kenya as at 31st
December 2013**

- 1) APA Insurance Limited
- 2) Apollo Life Assurance Company
- 3) British American Insurance Company (Kenya) Limited
- 4) CFC Life Assurance Company Limited
- 5) AIG Insurance Kenya
- 6) CIC Life Assurance Company Limited
- 7) Heritage Insurance Company
- 8) ICEA Lion insurance Company
- 9) Jubilee Insurance Company
- 10) Kenya Orient insurance Company
- 11) Madison Insurance Kenya Limited
- 12) Monarch Insurance Company
- 13) Pan Africa life Assurance limited
- 14) Pioneer Assurance Company Limited
- 15) UAP Insurance Company Limited

(Source: IRA, 2013, Kenya.)