

MIDLANDS STATE UNIVERSITY

FACULTY OF COMMERCE



DEPARTMENT OF INSURANCE AND RISK MANAGEMENT

DETERMINANTS OF FARMER PARTICIPATION IN AGRICULTURE
MICROINSURANCE IN ZIMBABWE

CHATIZAH LOICE

R142333Y

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS OF THE BACHELOR OF COMMERCE IN
INSURANCE AND RISK MANAGEMENT (HONOURS) DEGREE.

NOVEMBER 2017

MIDLANDS STATE UNIVERISTY

P BAG 9055

Telephone (263) 54 260404/260337/260667

GWERU

Fax (263) 54 260233/260311

Zimbabwe

FACULTY OF COMMERCE

DEPARTMENT OF INSURANCE AND RISK MANAGEMENT

RELEASE FORM

NAME OF AUTHOR	CHATIZAH LOICE
TITLE OF DISSERTATION	DETERMINANTS OF FARMER PARTICIPATION IN AGRICULTURE MICROINSURANCE IN ZIMBABWE.
DEGREE PROGRAMME	B.COM (HONS) IN INSURANCE AND RISK MANAGEMENT.
DISSERTATION SUPERVISOR	MRS. MATSIKA
YEAR OF AWARD	2017.

Permission is hereby granted to the Midlands State University library to produce single copies of this dissertation and to lend or to sell such copies for private, scholarly, or scientific research only. The author reserves other publication rights and neither the dissertation nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

SIGNED:.....

DATE:.....

MIDLANDS STATE UNIVERISTY

P BAG 9055

Telephone (263) 54 260404/260337/260667

GWERU

Fax (263) 54 260233/260311

Zimbabwe

FACULTY OF COMMERCE

DEPARTMENT OF INSURANCE AND RISK MANAGEMENT

APPROVAL FORM

This serves to confirm that the undersigned has read and recommended to the Midlands State University for acceptance of a dissertation entitled,

“Determinants of farmer participation in agriculture micro insurance in Zimbabwe.”

submitted by Loice Chatizah in partial fulfilment of the requirements for the Bachelor of Commerce (Hons) degree in Insurance and Risk Management.

SUPERVISOR:..... DATE...../...../2017

(Signature)

SUPERVISOR:..... DATE...../...../2017

(Signature)

DEDICATION

Special Dedication to you Mum, I love you.....

ACKNOWLEDGEMENTS

Firstly, I would like to thank the Lord God Almighty, for his guidance and protection during my four year period at the Midlands State University. I express my sincere gratitude to Mrs. R Matsika my project supervisor, for her constructive criticism, patience and encouragement. I also greatly appreciate all the members of staff in the Department of Insurance and Risks Management, you made this journey bearable. Much appreciation is also extended to Ruvimbo Gatora, Kumbirai Chikomba, and Hope Madzviti and the whole Insurance Risk management class for their encouragement, I thank you all for your support during this research project and also for the great four years we have been together. Lastly I want to thank my parents for all that they provided for me to complete this journey at Midlands State University.

ABSTRACT

The study examined determinants of farmer participation in agriculture micro insurance in Zimbabwe specific reference to peri urban area in Harare. The study was promoted by low uptake of agriculture insurance products being experienced by companies offering agriculture micro insurance. There was need in the market to develop a product that is affordable due to the informalised nature of the Zimbabwean sector. There is need to reach to the poor households and mitigate their level of risks to reduce negative shocks on their assets. The target population were small holder farmers located in the peri urban arrears of Harare and two agriculture micro insurance providers. Sampling techniques used were stratified random sampling and convenience sampling. The census method of data collection was also included in the research. A mixed research approach was adopted combining both quantitative and qualitative data. An exploratory research design approach was adopted with research data being collected by way of utilizing the questionnaires, interviews and secondary data made available to the researcher by the Zimbabwe farmers Association this data was analysed using Stastical Package of Social Sciences (SPSS). Stepwise regression was then used to establish significant factors that influence the purchasing decisions of small holder farmers. Backward stepwise regression showed that 6 factors out of twelve factors are significant namely, price, trust, wealth and income, government schemes, product design, education and awareness. The other 6 factors were considered insignificant as they had no effect on the dependent variable. The significant factors were fitted in the logistics model regression model to assess the effect of the explanatory variables on farmer participation in agriculture insurance and 86.8% chance was established. The results also show that they was limited knowledge on the insurance products. The study recommended that awareness and education be conducted to the farmers, farmers should be innovative in their farming activities and subsidies/ incentives to be provided by the government so as to increase micro insurance uptake.

TABLE OF CONTENTS

RELEASE FORM.....	i
APPROVAL FORM.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
ABSTRACT.....	v
TABLE OF CONTENTS.....	vi
LIST OF TABLES.....	xi
LIST OF FIGURES.....	xii
ABBREVIATION AND ACRONYMS.....	xiii
CHAPTER 1.....	1
INTRODUCTION.....	1
1.0 INTRODUCTION.....	1
1.1 Background of the study.....	1
1.2 Statement of problem.....	5
1.3 Objective of the study.....	5
1.4 Research Hypothesis.....	5
1.5 Justification of the study.....	6
1.6 Significance of the study.....	7
1.7 Delimitations of the study.....	7
1.8 Limitations of the Study.....	8
1.9 Assumptions of the Study.....	8
1.10 Definition of key terms.....	8
1.11 Summary.....	9
CHAPTER TWO.....	10
LITERATURE REVIEW.....	10
2.0 Introduction.....	10
2.1 Understanding Micro insurance.....	10

2.2 Micro insurance product types.....	12
2.3 Benefits of micro insurance	13
2.3.1 Benefits to the policy holders	13
2.3.2 Benefits to insurers/Service providers	15
2.4 Distinctions between conventional insurance and micro insurance	16
2.5 Agriculture Micro insurance.....	18
2.5.1. Types of agriculture micro insurance cover.....	19
2.6 Determinants of farmer participation in agriculture micro insurance.....	21
Standard Expected Utility theory.....	21
Prospect theory.....	22
2.6.1 Economic factors	22
2.6.2 Personal and Demographic factors	26
2.6.4 Structural Factors	30
6.5 Government schemes	31
2.7 Review of Empirical studies	31
2.8 The regulatory framework of micro insurance	33
2.8.1 Regulatory risks for micro insurance.....	34
2.8.2 Regulation in Zimbabwe.....	35
2.9 Summary	36
CHAPTER THREE	37
RESEARCH METHODOLOGY.....	37
3.0 Introduction.....	37
3.1 Research philosophy	37
3.1.1 Realism	38
3.1.2 Interpretivism.....	38
3.1.3 Pragmatism	38

3.1.4 Adopted philosophy	39
3.2 Research design	40
3.3 Population and Sample	41
3.3.1 Target population	41
3.4 Sample and Sampling Methods	42
3.5 Census method of data collection	43
3.6 Sample size determination	43
3.7 Research instruments and data collection	45
3.7.1 Primary Data	45
3.7.2 Secondary Data	48
3.8 Variables in the study.....	50
3.8.1 Dependent variable	51
3.8.2 Independent variable	51
3.9 Data analysis	51
3.9.1 Stepwise Regression	51
3.9.2 Backward elimination	52
3.9.3 Cross tabulation	52
3.10 Model specification.....	52
Model Assumption.....	53
3.10.1 Wald statistic.....	54
3.11 Software	54
3.12 Tests of significant.....	54
3.13 Conclusion	55
CHAPTER 4	56
RESULTS, ANALYSIS AND INTERPRETATION.....	56
4.0 Introduction.....	56
4.1 Questioner response rate	56

4.2 General information	57
4.2.1 Gender of respondents	58
4.2.2 Age of respondents	59
4.2.3 Highest level of education	59
4.3 Micro insurance and its potential benefits	61
4.3.1 Farm activities versus production risks.....	61
4.3.2 Effect of risks on agricultural activities	62
4.3.3 Agriculture micro insurance coverage	63
4.4 Relationship between factors and farmer participation in agriculture micro insurance in Zimbabwe	65
4.4.1 Regression using Backward Selection	65
4.4.2 Logistic Regression Model	69
Control variables.....	72
Significant variables.....	72
Insignificant variables.....	76
4.5 Qualitative Results	79
4.5.1 Agriculture micro insurance in Zimbabwe (Insures Response).....	79
4.5.2 Involvement and government participation in Zimbabwe	80
4.5.3 Recommendations for farmer participation in agriculture Micro insurance.....	80
4.5.4 IPEC Involvement and government participation in Zimbabwe	81
4.6. Summary	81
CHAPTER 5	82
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	82
5.0 Introduction.....	82
5.1 Findings from the study	82
5.2 Conclusion	83
5.3 Policy implications.....	85

5.4 Recommendations.....	85
5.5 Suggestions for Further Research.....	88
REFERENCE LIST	89
APPENDIX A: Letter of request	95
APPENDIX B: FARMER’S QUESTIONNAIRE.....	96
APPENDIX C: INSURER’S INTERVIEW GUIDE.....	99
APPENDIX D: REGULATOR (IPEC) INTERVIEW GUIDE.....	100

LIST OF TABLES

Table 2.1: Differences between traditional and micro insurance	17
Table 2.5: Access to credit and its effect of micro insurance participation	25
Table 3.1: District for the farmers.....	44
Table 3.2: Sample size per School.....	44
Table 3.3: Variable identification for the study	50
Table 4.1: Questionnaire response rate	57
Table 4.2: farming activities and production risks.....	61
Table 4.3 Extent of the effects of agriculture activities.....	63
Table 4.4: Factors in the equation in the first step.....	65
Table 4.5: Factors in the equation in the second and third step.....	66
Table 4.6: Factors in step four to six.....	67
Table 4.7: Factors in the equation in the last step.....	69
Table 4.11: Model Summary	70
Table 4.12: Final Model and Variables in the equation.....	70

LIST OF FIGURES

Figure 1.1: Distribution of Insurers' Gross Premium Written by Business Class	2
Figure 2.2: The impact of shocks on house income and asserts	14
Figure 2.4: Shows types of agriculture microinsurance.....	19
Figure 3.1: Adapted from Malhotra (2010), p. 103	41
Figure 4.1 Gender of respondents.....	58
Figure 4.2 Age of respondents	59
Figure 4.3: Highest level of education of respondents	60
Figure 4.4 Micro insurance coverage.....	64

ABBREVIATION AND ACRONYMS

CGAP	Consultative Group to Assist the Poor
GDP	Gross Domestic Product
IAIS	International Association for Insurance Supervisors
IFAD	International Fund for Agriculture Development
ILO	International Labour Office
IPEC	Insurance and Pensions Commission
MFI	Microfinance Institution
NGOs	Non-Governmental Organisations
PDL	Poverty Datum Line
PSMAS	Premier Service and Aid Society
SACCOs,	Savings and Credit Cooperatives Societies

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

A well-known statement that agriculture is the spinal cord of Zimbabwe, Zimbabwe was once the bread basket of Africa due to its large produce. Where production process in agriculture is entirely different than in other industries, this sector bears risk and a lot of uncertainties due to the abundance of factors that affect it.

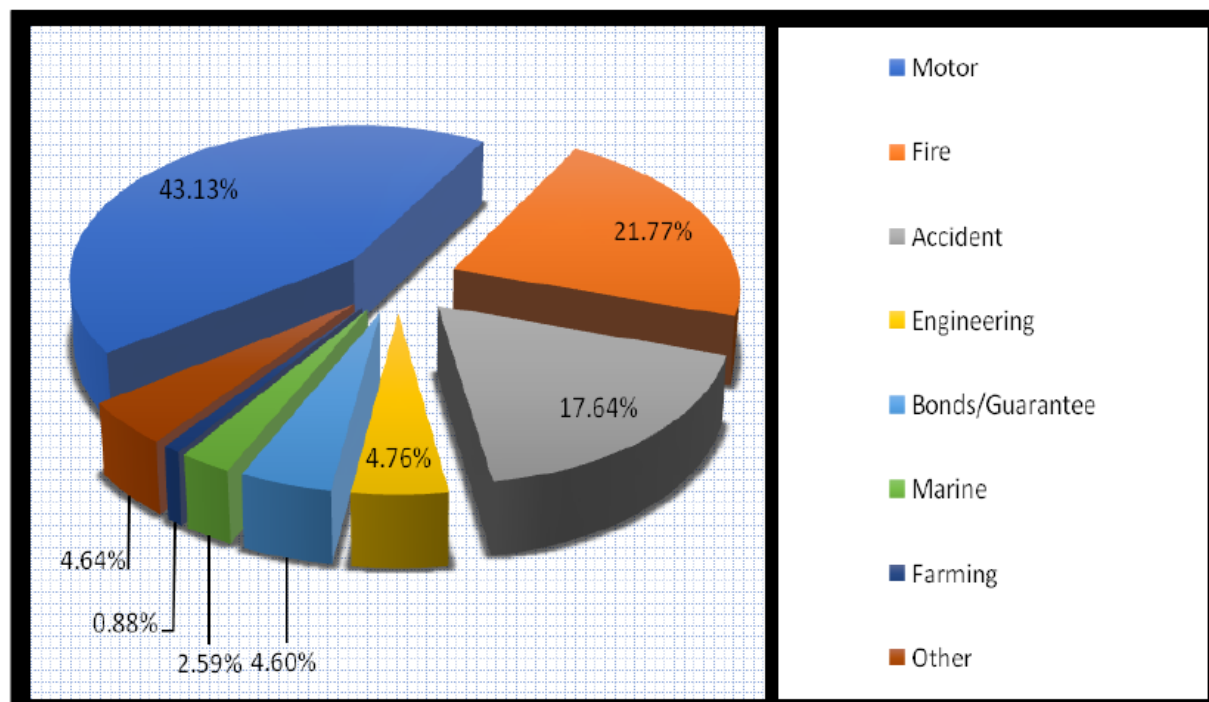
This chapter introduces the research. It highlights the problem to be investigated in the background of study and the statement of problem.

1.1 Background of the study

Agriculture has been a vital component in most African countries. In Zimbabwe, agriculture sector is the largest economic sector in the country. It heavily influences other economic sectors in particular the manufacturing sector. Agriculture contributes 11-14% of the GDP, provides employment to 70% of the population of Zimbabwe and 60 % of raw materials (BMI Research, 2017). Agriculture exports produce proximately \$13.4 billion annually 40% of Zimbabwe's foreign exchange earnings are made through the exports. The partitioning of land, according to Cross (2016) states that 700 000 small scale peasant farmers on 16 million hectares of land, 65 000 small scale commercial farmers on about four million hectares of land and 6 000 large scale commercial farmers on about eight million hectares with two million hectares held by large scale estates and wild life conservancies.

The insurance industry consist of 20 non-life insurance, 8 reinsurance companies and 32 insurance brokers ,that offer a diverse range insurance products. The average contribution of each product to the industry gross premium shown figure 1 below from fourth quarter IPEC report 2016. The largest contribution comes from motor insurance with 43.31%,Agriculture consist of 0.88% percentage only being the least gross premium written from all other products. These statistics show that 25 registered companies in Zimbabwe 60% provide agriculture insurance.

Figure 1.1: Distribution of Insurers' Gross Premium Written by Business Class



Adopted from IPEC REPORT 2016: Fourth Quarter

According to the report from the Sunday Mail 18 January 2017, levels of insurance uptake in the farming sector in the county are very low, farmers do not seem to fully appreciate insurance products offered by the insurance companies and their intrinsic value. Agriculture insurance uptake comparing with other sectors of the economy such as manufacturing, mining and service sector across is very low. According to BH24 Reporter (2017) the insurance penetration in Zimbabwe is estimated at 2%, provided for new products. These farmers view insurance as an unnecessary expense rather than a tool that curtails them from future risks (Makaudze, 2012).

The introduction of micro insurance was a way of delivering effective and efficient insurance services and products as well as promoting financial inclusion. According to The Micro insurance Network (2015) the current micro insurance penetration rate is pegged at 1.1% for all new products, agriculture micro insurance is standing at 0% relative to other micro insurance plans. If

we compare with other countries in Africa such as South Africa, 64% of the population is covered under micro insurance while in Zambia, Namibia and Swaziland 22.2%, 15.1% and 21.4% of the population covered by micro insurance respectively. Their industries are experiencing increases premium growth due to introduction of new micro insurance products, we would find that the penetration of insurance in Zimbabwe is still very low. Africa produced only 1.94 of the global premium volume in 2009 South Africa being the dominant market accounting for 90% of the premium volume. (IFAD, 2011).

The need for micro insurance has been identified as a critical instrument for providing effective and efficient insurance services, according to the report from the Zimbabwe independent of 25th October 2013. The report from The Herald 19 June 2017 also states that the IPEC launched a micro insurance regulatory framework that will facilitate the provision to low income earners due to the highly informalised nature of the economy.

Most of the people in low and middle income countries live in poverty. According to Zimbabwe National Statistics Agency (2017) in its latest released reports show insights on the poverty analysis in Zimbabwe, it shows that the cost given of living standards stands between \$430 and \$574 for an average household of 5. It further denotes that Zimbabweans live below the PDL and they are struggling to afford a basic standard of living. The purchase of insurance will therefore be a strain on the already existing tight budget and will automatically be removed from the basic list. According to Chen and Ravallion (2010) approximately 2.5 billion people live under the international poverty analysis which stands \$2 a day and some even live under the \$1.25 a day line.

A survey done by the Finscope Report (2014) adds on that over 70 percent of adults do not have insurance, while 30 percent of the population have insurance, 77 percent is in respect of funeral cover. The primary objective of the frame work is to promote the development of micro –insurance so as to establish the basis of legal framework for the regulation of micro insurance activities.

The informal sector has remained largely uninsured thereby exposing this sector to risks which can be managed by insurance. Due to the failure of accessing affordable insurance cover the

following losses have been experienced. According to the Herald report in February 2014 about 60 00 people who lived around the Tokwe Mukosi basin were affected by floods due to excessive rains. The flooding was detrimental as it destroyed homesteads, grains and livestock. The affected community's mostly were low income earners who did not have any known insurance policies in effect to protect themselves against loss of property, crop and life. In addition rendering to the Sunday Mail report 2017 this year drought has so far left 100 000 cattle dead in each province namely Masvingo, Midlands and Matabeleland provinces.

A report online by Risk & Insure Zimbabwe (2017) states that this year's rainy season left scores of families marooned in flood waters which damaged property and crops, killing both livestock and human life. With a coordinated insurance plan, it will be easier for such communities to recover from such unexpected costs.

According to a report by Risk & Insure Zimbabwe (2017) on its official website, states that 5 micro insurance products have been launched, funeral cash plans having to have dominated the new micro insurance products landscape, it is shown that Nyaradzo has a low costs plan called Sahwi Lite, Moonlight having a comprehensive funeral plus cash plan, PSMAS have also introduced Shield Plan. Mobile operators also have ventured in this move as Net one has introduced a low cost mobile insurance product for their captive subscribers called One cover.

Very few notable companies have targeted farmers in the newly introduced market. According to Old Mutual website on the 18th of November 2016 the company launched drought insurance product targeted at farmers with one or two hectares of land primary to grow maize for subsistence. The Financial Gazette of 22 November 2016 states that from the day of the launch of the product 3000 farmers have signed up for drought insurance cover out of a targeted 50 000 small scale farmers. Zimnat insurance company a subsidiary of Zimnat group is yet finalize on its new agriculture insurance product and are expected to conduct a pilot survey. Econet also has found a revolutionary way of using technology to provide micro insurance product called Eco-farmer designed to insure crops against drought and excessive rainfall on. According to figures released in the mobile operator's 2016 integrated financial report Eco farmer to date now has 250,000

subscribers. The last Eco farmer subscriber figures that were shared showed 550,000 in August last year thus a 54.54% drop in farmer participation.

According to Ackah and Owusu (2012) points out the determinants for insurance participation in general in Sub Saharan African literature, on micro insurance specifically seems more prevalent. They include lack of awareness of the existence of the available insurance products and also a very poor understanding of the concept of insurance.

1.2 Statement of problem

Against the above background, the research seeks to examine the determinants of farmer participation in agriculture micro insurance in Zimbabwe.

1.3 Objective of the study

There are two objectives the author intends to archive in this research, these are;

- I. To define micro insurance and identify its potential benefits
- II. To examine the relationship between (Price, wealth and income, education and awareness, basis risk, trust, peer influence, religion, product design, distribution channel, government policies, age and gender,) and farmer participation in agriculture micro insurance.

1.4 Research Hypothesis

Below are the guiding hypothesis that the researcher intends to clarify in achieving the above research questions.

***H*₀**: {Price, wealth and income, education and awareness, basis risk, trust, peer influence, religion, product design, distribution channel, government policies, age and gender} do not affect farmers participation in agriculture micro insurance.

***H*₁**: { Price, wealth and income, education and awareness, basis risk, trust, peer influence, religion, product design, distribution channel, government policies, age and gender } affect farmers participation in agriculture micro insurance.

1.5 Justification of the study

The study is of major importance because the findings will aid the insurance industry of Zimbabwe in its quest to enhance their premium growth by entering into this new development by offering agriculture micro insurance products which are trending insurable risks to the local industry. The market is currently seizing with ideas of how to tackle this issue and the research will offer insights on how we can lure farmers to purchase insurance. Numerous studies that have been carried out by different scholars show that, for example a study carried out in India by Mobarak and Rosengzweig (2012) on the determinants of the purchasing decision for rainfall insurance found out that trust, risk aversion, geographical location and past experience are the major drivers that would push a farmer to purchase micro insurance product.

Arun, Bending and Arun (2012) with Bauchet (2013) commonly agree on the bequest motives and determinants of micro life insurance and where interested to find whether the determinants of life insurance penetration and density were similar to those of any other micro insurance such as agriculture and funeral insurance penetration. Also studies have been done on effects of trust in participation of micro insurance products in Ghana by Karlan, Osei, Akoto and Udry (2012). Obuba (2014) did a study on the effect of product pricing on the growth of micro insurance by insurance underwriters in Kenya, had interesting findings that showed price plays a vital role in determining rate and which premium to used. The researcher further revealed that overpriced products in micro insurance will be perceived as luxury as well as under-priced products exposes the company to substantial risk of solvency.

Most studies on farmer participation has been done on an international level, on a local basis no known research has been done and also all these studies however did not fully address on the determinants for farmer participation in agriculture micro insurance as they are very few

agriculture insurance products being provided this is because the poor have been excluded from the existing formal and commercial schemes due to the supply and demand side constraints. In short the objective of this paper is to fill out the gap that has not been fully exhausted and researched to aid the Zimbabwe Agriculture sector as well as other decision making entities to relook into the micro insurance product seriously.

1.6 Significance of the study

a. To the regulators and government entities

The government and policy makers will benefit from the findings when drafting their legislation, signing up new emerging micro insurance providers also taking into consideration the already existing insurance companies. The IPEC which is responsible for regulation of insurance services will use the findings to make recommendations to the government and the best approaches of handling risks.

b. To the University and the researcher

To the university the report will be deposited in the university library for use by other academics and scholars researching on the same or related topic/s. To the researcher it will equip the student with deep knowledge of the subject under study and are more sharpened understanding of the Zimbabwe Insurance Industry.

1.7 Delimitations of the study

The research is intended to benefit the short term insurance sector to a larger extend. It will focus on all providers of agriculture micro insurance in Zimbabwe and the information will be accessed from both the farmers and the service providers in a certain targeted area. The period of research will be conducted from June 2017 to October 2017.

1.8 Limitations of the Study

- a. Lack of sufficient theoretical research materials, this will affect the quality of research findings. It also means that the study might lack reliability to other users which obscures the realistic impact of research. There is limited material in the university library for Agriculture micro insurance most text books lack depth on this matter.
- b. Unavailability of statistics on farmers in Zimbabwe who have signed up for agriculture micro insurance products and losses or pay-outs made by the current service providers.
- c. Micro insurance is an emerging market sector in Zimbabwe. Most companies are not willing to give out information regarding micro insurance products due to fear of competition from other companies. This challenges the validity and reliability of the research.

1.9 Assumptions of the Study

The major assumption of the study was that the selected sample would be true representative of the population and the instrument to be used will elicit reliable responses. To also ensure that the assumption would hold the researcher exercised extreme care in selecting the sample. The other assumption was that the respondents would be honest in their responses especially on issues pertaining to the awareness and participation of these agriculture micro insurance products. Lastly that they are only two companies in Zimbabwe who are providing agriculture micro insurance products.

1.10 Definition of key terms

- a. **Micro insurance:** According to Roth and McCord (2008), micro insurance is insurance that is accessed by the low income population, provided by a variety of entities but run in accordance with generally accepted insurance accepted practises.

1.11 Summary

The introduction presented an overview of the background of the Zimbabwean insurance industry. Objectives and research hypothesis were highlighted to which the main study will focus on achieving and clarifying. The chapter also discussed the delimitations and limitations and the value of the study to all the relevant audiences. The next chapter will review works by other scholars who have published articles relevant to micro insurance products.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section will bring into being the base for the research by reckoning into what other researchers have discovered in their assorted studies on the subject. The structure of this chapter comprises firstly the definition of micro insurance and benefit of micro insurance, determinants of farmer participation in micro insurance and a brief insight on regulation of micro insurance. The literature on agriculture micro insurance demand was limited to a variety of field studies written by researchers all over the world most of the works were of traditional academic nature.

2.1 Understanding Micro insurance

According to McCord and Roth (2006) defined micro insurance as the protection of economically challenged people against specific perils in exchange for regular premium payments which is proportional to the likelihood and of the risk involved. This means that low income people can use micro insurance where it is available as a way of managing risks. Churchill (2012) says that micro insurance is insurance that works by risk pooling which is financed through regular premium and is tailored to the poor who would otherwise not be able to take out insurance.

The international association of Insurance Supervisors (IAIS) defines micro insurance the same as McCord and Roth (2006) but further explain that this concept of micro insurance means different things to different people. Commercial insurers view it as a potential way of reaching large underserved markets, developmental institutions such as the World Bank and United Nations see its potential to secure poverty reduction. Financial journalist and analyst all over the world highlight the size of markets as the bottom pyramids.

Micro insurance plan provides cover to certain individuals who have little savings and is tailored specifically for lower valued assets and compensation for illness, injury or death. Deacon (2011) precisely puts forward that micro insurance can be found in third world countries where the current

insurance markets tend to be inefficient. The micro insurance products are designed with the objective of protecting poor people who would be paying the lowest premium and having the cheapest coverage insurance policies (Indian Journal of applied research; Volume 3, 2013).

Churchill (2012) noted that there are different approaches about how the term micro insurance can be understood:

1. Target group - the target group approach was the original definition, showing that micro insurance was for low income people, but it did not give a clear guidance on how to determine the group which was the 'low income' therefore the definition could not be used by regulators or insurers.
2. Product definition – these definitions apply the term 'micro' to characteristics of the products, such as having low premiums, low levels of coverage being affordable and accessible.
3. Provider definition- another way of defining micro insurance is based on the type of organisation that is providing the product. A definition that focuses on its providers can prevent the expansion of micro insurance because a variety of institutional arrangements are necessary to reach the wide unserved market.

Other academics such as (CGPA, 2013) state that micro insurance is designed to be appropriate for the poor in relation to cost, terms, conditions and coverage and providers. It provides a better way alternative to relying on credit and savings product to manage the impact of risks. We note that all the definitions rule out the misconception that micro insurance is charity as it involves cost, risk pooling and payment of premiums which are proportionate to the risks that they are exposed. An article published by Financial Access (2011) further adds that micro insurance is a financial tool that helps low income households to mitigate risks and plan for the future. It enables them to cope with unpredictable income, while also preparing for financial emergencies that threaten their livelihood.

2.2 Micro insurance product types

To have a better understanding, we briefly look into the popular micro insurance products that are being provided below in box 1;

Box 1: Major micro insurance products

- Life insurance
- Health insurance
- Accidental death and disability
- Agriculture insurance
- Property insurance

1. **Life insurance** –this is the most prolific micro insurance product in developing countries, and the basic indicator of this product being accepted in the market is the number of policies sold. Enarson, Wiren and Almeyda (2016) reviewed that most life micro insurance products are short term, which is a term life insurance policies are easy to provide and has already proved to be very profitable. There is high demand for life insurance that provides a substantial coverage in case of death of the breadwinner.
2. **Health insurance**- Churchill (2012), Maleika and Kuriakos (2008) and Lloyds (2013) noted that almost all surveys have shown that health insurance is the product most preferred by low income groups. The health micro insurance products that are available are limited relatively small in terms of lives covered and in some cases, donor funded.
3. **Accidental death and disability**- this is a very common micro insurance product, this one way for insurers that are not life insurers to legally address a type of life cover. Disability is more difficult to manage with efficient and cost effective controls, it is often linked with death cover in personal accident products. Dismemberment micro insurance is possible and confirmation of the insured event is clearer but us of this products limited .When linked to

mandatory credit life insurance often the policy holder does not even know that these benefits exist (Lloyd's 2010 and IAIS 2011).

4. **Agriculture micro insurance-** rendering to Levis Reinhard (2012) agriculture micro insurance is providing insurance cover to small scale farmers in developing countries. It involves the broad questions on how low income farmers who are below the poverty level can be indemnified for agriculture losses due to severe weather conditions .The study focuses on this product and the researcher will elaborate more regarding this product further in this research.
5. **Property insurance-** this product tends to be lower in terms of its up take relative to health and life insurance, reasons for challenges in its uptake are lack of title deeds for informal housing, high claims handling costs and the difficulties of managing fraud risks (Lloyds,2010)

2.3 Benefits of micro insurance

Low income people in developing countries do not have access to adequate risk management tools. They are therefore so vulnerable to fall back or fall deeper into poverty such as uninsured risks eventually occur. However if these risks have been insured against the potentially significant detriment to the person, to their family and the vast community will be reduced and could have been eliminated together. In the absence of functioning insurance market, poor people in disadvantaged countries have created a number of formal as well as informal risks (World Bank, 2015).

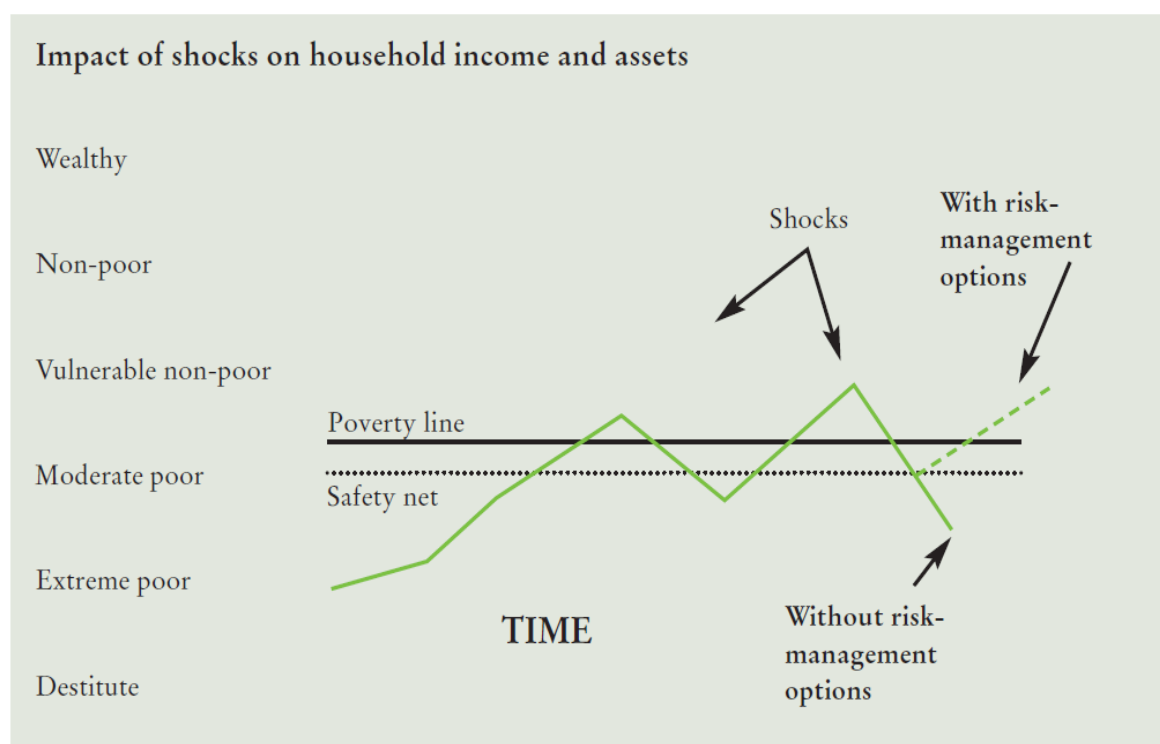
2.3.1 Benefits to the policy holders

a) Protecting the poor against negative shocks on their assets

Poor people struggle endlessly to improve the way they live, it is a very slow gradual process to free oneself from poverty situation. They are continuously faced with financial pressures low income households find that shocks can easily erode their hard earned gains. Churchill (2012) reviewed the results that their trajectory out of poverty follows a zig zag route Figure2.1; shows

advance's that reflect time of assets, buildings and income growth, declines are the results of shocks and economic stresses that often push expenditure beyond current income. The role of micro insurance is that it acts as a risk management tool as a way to temper down turns which major impediments to escaping poverty. Tran and Yun (2004) comment on the impact of shocks on non-poor are minor relative to the poor as they are devastating as they tend to get sick more often. They face different tradeoffs, high health costs can also leave these poor people unable to send their children to school.

Figure 2.1: The impact of shocks on house income and asserts



Source: Adapted from McCord, 2005.

b) Spreading of risks

According to Jingo (2016) the presence of uninsured risk may mean that the low income earners and or/ consume in a less efficient manner because of their stifle income productivity and living standards on a national level. He further denoted the possibility of micro insurance to low income

people to produce and/ or consume more efficiently by enabling them to take more appropriate risks. For example, without this cover farmers may elect to grow crops that are drought resistant but have lower yields in a good season. If the same farmers were insured against a bad harvest they would be in a better position to grow crops that have high yields in good years and bad years in years of drought. The spreading of risks by force of micro insurance would therefore promote greater potential returns, not only on an individual level but also for the economy as a whole.

c) Risk management tool

Most academics and other various scholars purport the benefits of micro insurance to poor households. Churchill (2012) noted that although poor households often have informal means to manage risks, these strategies might provide insufficient protection. Informal strategies for coping with risk tend to cover only a small portion of the loss so the poor have to patch together support from a variety of sources. Most of these strategies do not stand up well against a series of perils which is often faced by the poor households. Micro insurance is considered by development practitioners as one of the financial services to help the poor with risk coping (Churchill, 2012 and Ahmed, 2007).

2.3.2 Benefits to insurers/Service providers

Roth (2010) looked at benefits that accrue from micro insurance and mentioned that it gives insurers access to a large and more diversified pool of risk and allows them to get a foot in the door of developing markets. With the current trends, insurers have discovered that the low income client today will be the middle income client tomorrow. In addition (Lloyds, 2010) goes on to identify more benefits from micro insurance that can accrue to commercial insurers are;

a) Diversification

Khencht (2013) states that spreading of risk requires a technique of setting different activities into new products, risks and market as a diversification strategy on the business portfolio. A micro insurance strategy can provide a sound basis for the future growth, here the company can diversify into new regions and explore unexploited markets.

b) A laboratory for innovation

This can be a radical innovation for some insurance products that had a low uptake. Due to the advancement of technologies and rapid changes in the environment they is need for new solutions in products and procedures. The small transaction sizes in micro insurance products require a good cost efficient process or system, from sales and premium collection to claims handling. According to AIG Indonesia (2015) the resulting innovations can be implemented in traditional business lines, with substantial gains in efficiency.

c) Market intelligence

Hedin (2014) states that research and business in unfamiliar markets through micro insurance programs may build experience with staff for traditional insurance activities in these markets. Entering into new markets into a micro insurance initiative provides practical insights into business environment, regulatory practice and unknown economic and political structures.

d) Reputation benefits

If a company participates in micro insurance it shows commitment to corporate social responsibility, it adds value to brand names in both traditional and new markets and help justify initial investments in micro insurance. There is also no evidence of the notion that says that micro insurance improves the lives of its clients. A statement by the IAIS (2011) said ‘‘In absolute terms, many micro insurance initiatives launched by governments, insurers and other organizations to protect the lives, health and assets of the low income persons have made a tremendous impact’’.

2.4 Distinctions between conventional insurance and micro insurance

What is new in agriculture insurance? The traditional crop insurance have largely proven too expensive for small holders (governments in low- and middle income countries) for them to be sustained over time (Mahul and Stutley, 2010). Micro insurance draws on the same generally accepted practices as traditional insurance for example reinsurance, claims settlement and actuarial pricing. However the micro insurance products are not the downsized traditional off the shelf products, they have shown their own fundamental differences according to (Lloyds, 2009).

According to Lloyds (2009) traditional insurance refers to insurance geared toward moderate to high income earners who are predominantly in developed countries that have an established insurance culture. First while the influence of risk aversion in traditional markets is huge, it is closely universally negative in the micro insurance domain.

Table 2.2: Differences between traditional and micro insurance

	Traditional insurance	Micro insurance
Clients	<ul style="list-style-type: none"> • Low risk environment • Established insurance culture 	<ul style="list-style-type: none"> • Higher risk of exposure • Weak insurance culture
Distribution models	<ul style="list-style-type: none"> • Sold by intermediaries or by insurance companies directly to wealthy clients or companies that appreciate insurance 	<ul style="list-style-type: none"> • Sold by non-traditional intermediaries to clients with little experience of insurance.
Policies	<ul style="list-style-type: none"> • Complex policy documents with many exclusions 	<ul style="list-style-type: none"> • Simple language • Few if any exclusions • Group policies
Premium calculation	<ul style="list-style-type: none"> • Good statistical data • Pricing based on individual risks (age and other characteristics) 	<ul style="list-style-type: none"> • Little historical data • Group pricing • Very price sensitive
Premium collection		<ul style="list-style-type: none"> • Frequent and irregular payments adapted to

Claims handling	<ul style="list-style-type: none"> • Monthly to yearly payments, often-paid by mail-based on an invoice , or by debit orders • Complicated processes • Extensive verification documentation 	<ul style="list-style-type: none"> • volatile cash flows of clients • Often linked with other payments such as loan payments. • Simple and fast procedures for small sums • Efficient fraud control
-----------------	--	---

According to Morsink and Geurts (2011) noted that the difference between insurance and micro insurance refers merely to the targeted clients and the context in which they are embedded and it does not refer to the (i) size of the risk-carrier; (ii) scope of the risk or the (iii) delivery channel.

2.5 Agriculture Micro insurance.

According to Munich Re (2005) states that the national agriculture insurance products have almost universally failed in terms of commercial viability. Efforts are being developed to reduce some of the moral hazards and fraud that plagues such products. Index based weather insurance, where pay-out in case of little rainfall and other measurable weather conditions is being practised in many African countries to improve food supply (IFAD, 2011). Most banks are unwilling to lend farmers due to low probabilities of repayment if they is drought. The index based covers not only allow small holder farmers to access loans but also to adopt a more weather sensitive, but much more profitable crop.

Agriculture micro insurance is about providing agriculture insurance to small scale farmers in developing countries (Reignard 2011) McCord and Roth (2008) and Churchill (2007) ,others reviewed that the agriculture micro insurance market typically consist of low income people with limited or no previous exposure to insurance. The implication is poor people may not be able to

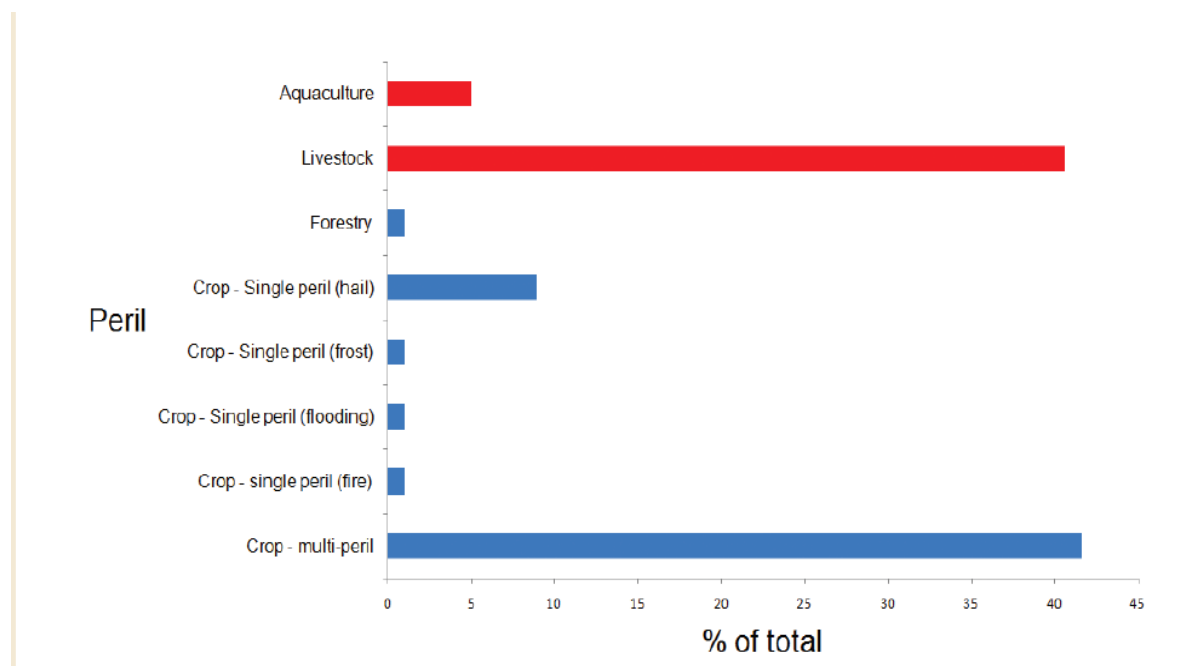
afford the large insurance premiums charged. As a consequence providers of this cover have to sell large numbers of policies in order to reach critical mass and break even or make profit.

Looking at this particular sector which comprises of peasant/ subsistence farmers, there seems to be limited knowledge of micro insurance and hence in addition advertising a particular agriculture micro insurance product may be very difficult therefore they need to educate the market on the need for and the principles of micro insurance.

2.5.1. Types of agriculture micro insurance cover

The bulk of agriculture micro insurance covers losses either livestock or crops. They are a vast majority of policies sold to poorer farmers for crop cover which are multi-peril. Figure 2.3 below shows the types of agriculture micro insurance. According to Roth and McCord (2008) defined a multi-peril insurance as cover on crop products based on shortfall on expected yield rather than on damage caused by a particular loss event, shortfall is determined by either on area basis or per individual farmer.

Figure 2.3: Shows types of agriculture microinsurance



Source: Adapted from Roth and McCord (2008)

According to Micro insurance Centre (2008), they commented on how the losses are quantified and the summary of the process. Determining agriculture losses require a visit from skilled a loss adjustor. In case of named peril crop policies the loss adjustor has to ascertain the degree to which the losses were caused by the named peril and he should be skilled to access the amount of the loss. They further stated that for multi crop the insurer must first establish a yield history for the farmer and then to measure the yield at harvest. Livestock insurance loss adjustment is general costly. The loss adjustor has to also ascertain that the animal actually died. Benefit have to be calculated accurately taking into account the carcass. For both livestock and crop micro insurance the unavoidable costs of loss adjustment present a severe challenge to the maintenance of low premiums.

Having discussed the types of products that are available on an intentional level, Table. 2.4 Shows the types of agriculture products in Zimbabwe market and the risks that are covered.

Table 2.4 Available agriculture micro insurance products in the Zimbabwean market.

Product	Famer type	Risks insured	Value Chain	Underwriting data
Multi-peril	Large and Livestock	Named risks	All Crops	yield data from individual farmers
Weather Index	Small and large farmer	Weather related diseases, drought ,excess water	Cotton, maize, sunflower ,sorghum, tobacco	weather data , minimum years 15years
Satellite index	Small and large farmer	Weather related disease, drought ,flooding, excess water	All above plus horticulture and irrigated crops	satellite data minimum is 15 years

According to Makudze (2012) an overview on the Zimbabwean market shows that these type of covers are for farmers that are in groups and have well established agribusiness. The level of their

volume of premiums are determined by how many farmers grow the crop and the extent the growers invested in terms of inputs this adds in coming up with a realistic future premium volume. The researcher has noted from the literature that just a few individuals know the types of agriculture micro insurance that are offered they is just broad understanding of the common index insurance cover.

2.6 Determinants of farmer participation in agriculture micro insurance

It is easy for any entrepreneur to see the need for agriculture micro insurance products but very difficult to effectively estimate the demand for it without knowing the drivers that can make smallholder farmers to purchase the product. According to Roth and McCord (2008) the demand assessment tend to draw inferences from historical trends. Improved understanding of demand helps in designing appropriate products and steps that should be taken to ensure the adoption of the products by the poor households. Market research is the only tool that can improve the uptake of these unfamiliar services by determining what kind of insurance products these people need (Churchill and McCord 2012).

According to a research conducted by (Mirsink and Geuts ,2011) they mentioned that for us to understand the decision for micro insurance participation or the purchase of micro insurance its very critical for us to note the micro economies theories that are used in understanding the decision which are :

Standard Expected Utility theory

Under the expected utility theory it is assumed that demand for insurance is higher or risk averse individuals who mainly use insurance to mitigate losses (e.g., Neumann and Morgenstern, 1944;Schlesinger and Doherty,1985;Manning and Marquis, 1996). It explains demand by referring to insurance product characteristics which are premium and payouts, socio economic characteristics and it adopts that individuals are capable of measuring the probability of risk.

Prospect theory

The prospect theory is an alternative to the expected utility theory. It describes that participation in insurance by mentioning to the decision to purchase in relation to its substitute. It assumes the importance of social and cognitive factors in understanding economic decision. Slovic (1984) adds that prospect theory recalls that individuals make imperfect assessments of information. Though prospect theory suggests that not objective probability of risk influence the decision to take up insurance. It has also added to the understanding that small design changes in the products and the way they are marketed can influence the decision to purchase insurance (Mullainathan and Shafir, 2009, Dalal and Morduch, 2010). The theory allows for studying of different product attributes and marketing on demand for insurance.

The review identifies 12 key factors affecting micro insurance demand that is price, wealth, risk aversion and basis risk, trust, peer effects, financial literacy and client education, quality of service, product design, government policies, gender, and religion and distribution channels. The researcher has identified 12 aspects that have received significant attention in academic literature after undertaking a rigorous review of 41 papers that specifically discuss this topic.

2.6.1 Economic factors

a. Price of insurance/Affordability

The standard economic theory states that the price of any normal good is expected to inversely be related to the demand of a good or a service. Product pricing plays a very important role in the development of micro insurance as it determines the rate and as well the premium to be charged. Using such a simple model of demand (Cole et al., 2013) after a research design of randomized treatment for varying discount on insurance purchase in India for rainfall insurance find significant price sensitivity for rainfall insurance product, a 10 percent price decline increases the probability of take up by 10.4- 11.6 percent, thus indicating a price elasticity of 1.04-1.16. Mobarak and Rosengzweig (2012) did a similar study under rainfall insurance and found out that a 50 % price decline relative to the actuarial price increases the probability of take up, the further state that approximately 40 percent of treated households purchased insurance. Surprisingly Gaurav et al.

(2011) found that there is no effect on demand when he tested the effect of a money back guarantee for a full refund of the insurance premium in the rainfall insurance policy fails to pay out.

A vast number of studies on insurance participation use premiums as the price variable, but it's not realistic, when we look into the real world there are transaction costs to buying insurance such as effort and time required for either policy purchase or renewal and in the claims investigation process. Thornton et al. (2010) reviews that cost of time and effort are important reasons in coming with price of an insurance product, even when most they are subsidised. Regarding transaction costs, several studies posit the micro insurance institutions MFIs could play a role in lowering such costs. Most of the MFIs due to their locations which are widely available and also trust they have the ability to bundle credit with insurance purchases. Tadesse and Brans (2012) find a slight negative effect on enrolment among participants assigned to MFIs relative to a government agency.

After a reduction of a price it's most likely to increase demand of a product (agricultural micro insurance product). Cole et al. (2013) finds that even when prices are significantly below actuarially fair prices, fewer than half households purchase rainfall insurance, therefore he recommended heavy initial subsidies. The influence of subsidise may be perverse, according to Thornton et al. (2010), Fitzpatrick et al. (2011) and Bauchet (2013) adds that retention drop significantly after an expiration of subsidies running on the point that familiarity of the product will improve the results. Their notion could be true as some other studies show that lack of demand is evidenced due to lack of experience with the product.

b. Wealth (Access to credit/ liquidity) and income

As seen and proven several studies they show a positive relationship between wealth and micro insurance purchase (Clarke, 2011). The underlying theory is that wealth provides higher chances of accessing credit and high levels liquidity therefore the purchase of insurance is feasible. Liquidity refers to in this contest refers to availability of assets beyond what is needed to cover basic expenses and access to credit points to borrowing opportunities. Cote et al. (2013) reviewed that wealthier farmers are more likely to purchase rainfall insurance. Less wealthy households are

believed to have little or no margin for purchasing insurance especially as the farming season commence as they would have paid for other agricultural needs. These households may want to purchase insurance but it's simply that they have little resources and they do not permit to buy insurance at the time when premiums are due.

Unfortunately in micro insurance markets wealth is instead a signal of access to credit. Households without access to credit have less ability to reduce consumption in case of a shock and they thus may place higher value on insurance as a means to reduce volatility. This reasoning is underlined by Gollier (2013) in his theoretical model. Households which lacks access to credit may not have funds which are enough to buy insurance even though a shock may be more damaging to them than the wealthier households. Cole et al. (2013) supports this line of thought as he observed that take up increases by 140 percent when households are given enough money to buy at least one policy. In addition one authors speculate as to the effects to take up even higher level of cash disbursement.

Sometimes access to credit or even liquidity alone does not mean let alone a determinant for micro insurance participation. As seen by Clarke (2011) shows that even for those farmers who are not credit constrained and who are offered the fairest actuarial premiums, due to basis risk it causes them to purchase less than full insurance, in table 2.6 below it summarises the literature dealing with effect of credit constraints on micro insurance demand. To address the problem of credit unavailability (Liu and Myres, 2012) suggested an insurance design where farmers can delay premium payment until the end of the insurance period, the empirical results for this interesting suggestion are yet to be assessed.

Table 2.5: Access to credit and its effect of micro insurance participation

Author and year	Insurance type and location	Research design	Effects on take up rates
Gine et al. (2008)	Rainfall insurance, India	Household survey	Regression estimates show negative but not significant association between credit constraints and take up rates
Clarke (2011)	Index insurance (theoretical)	Theoretical model	In the presence of basis risk, even those with access to credit will not buy insurance
Liu and Myres (2012)	Dynamic Model of agriculture insurance	Theoretical model	Liquidity constraints reduce demand for insurance deferred payment relaxes such constraints
Karlan et al. (2012)	Rainfall insurance, northern Ghana	Randomised treatment varying cash and insurance grant	Insignificant effect on take up rates
Cole et al. (2013)	Rainfall insurance, India	Randomised treatment of high cash rewards (enough to buy insurance)	Take up or one policy increases take up by 140%

Research on traditional insurance markets found that both wealth and income are relevant, (Outreville 2013) review that greater levels of national income are associated with a higher insurance uptake. Because of multi colinearity issues most studies include either income or wealth in their analysis. It appears that wealth affects micro insurance and traditional products markets differently although we expect a positive sign in both markets. In traditional market income represents potential loss, that is the higher the anticipation of losses the higher the level of insurance purchased as we have noted above a household has a lower risk aversion with increasing wealth, but most empirical findings support the loss potential theory. Within the micro insurance market lower income individuals may actually have a greater need for insurance cover than wealthy because of the relative influence of the same type of shock. Even so after the above discussion limited resources do not necessarily fully explain the low uptake rates in emerging micro insurance markets.

2.6.2 Personal and Demographic factors

a. Gender

Research on this factor demonstrate lower risk tolerance by woman than men, though the results are not very clear. Lower risk tolerance tend to mean greater insurance purchase decision. The evidence regarding gender and micro insurance take up however tend to be mixed. Household headed by women are more likely to enrol insurance than households headed by men (Nguyen and Knowles, 2010). Women face special health risks which are related to pregnancy and childbearing, they are more vulnerable to diseases such as HIV/AIDS and domestic violence (Banth et al., 2009). Due to these specifics the insurance decision is expected to be different across gender. In latter case, it seems as if each house hold member has a different weight in the decision making process over any type of insurance. It is unknown in intrahouse decision making if it affects the participation in insurance products.

b. Age

Age in most insurance policies represents a loss exposure. In micro insurance literature age has been seen as ambiguous. Some studies state that age has a positive demand (Chen et al., 2013), some studies find a negative effect on demand (Gine et al., 2008) and (Cole et al., 2013) state that age has no effect on participation in micro insurance products. Arun et al. (2012) argues that in life insurance state that take up decreases with age which is in contrast with (Giesbert et al., 2011) view who notes that take up increases with age in life insurance. According to Velandia et al. (2009) older farmers with larger farms tend to use three major tools in risk transfer which are crop insurance, forward contracting and spreading sales. Therefore from the above it is not clear if age determines participation in agriculture insurance uptake but it serves as a factor that has not to be ignored.

2.6.3 Social and Cultural Factors

a. Risk aversion and basis risk

Risk aversion is thus under the expected utility theory, there is a negative association between risk aversion and demand (Eling, Pradhan and Schmit, 2013). A risk neutral or a risk seeking individual would not purchase insurance even the premiums are fair. A risk averse individual is more likely to purchase insurance. Risk aversion is generally measured using experimental designs outcomes and variances (Cole et al., 2013). In a case where an individual pays premiums and the insurance company fails to pay the claim due to basis risk, this can be unattractive to a risk averse person. According to Clarke (2011) and Decon et al. (2011) when risk aversion households increase demand for insurance might first increase then it will eventually decline.

Clarke (2011) states that low demand for insurance can be explained by risk aversion in the presence of basis risk. Basis risk refers to a situation when insurance pay-outs are not perfectly correlated with the underlying losses which is significant to indexed crop coverage. The participation of farmer may be affected as he might distrust an insurer.

b. Trust and Peer effects

Insurance is built on trust, therefore the level of demand of insurance by a farmer expected to be built on trust. In a place where the population is unfamiliar with formal insurance products it might be difficult for clients to measure the benefits of such an investment. Clients fear to be cheated on when they have paid their premiums and an adverse event occurs. According to Gine et al. (2008) trust in the insurance provider is a key determinant for insurance uptake. According to the Herald report 14th August 2016 in Zimbabwe it has been said that due to closure of insurance companies such as Heritage insurance company and Excellence insurance company some individuals lost confidence in insurance companies in the Zimbabwean market due to past experience therefore it affects demand of the product.

According to Patt et al. (2009) he described that there are three levels of trust that is trust in the product, the institution (the provider of the service) and interpersonal trust of individuals. Lack of trust in an institution can affect the confidence and strongly the product being offered. Cole et al. (2013) and Zhaing et al. (2006) find that lack of trust in even government subsidised insurance is a significant barrier to participation. Trust can be built to customers, according to Patt et al. (2009) describes that one method of building trust is through participatory games that teach players how insurance works, the method seemed to have a positive signal when used with a group of farmers.

Peer influence is related to trust in some cases. According to Karlan et al. (2012) participation for insurance in following year's increases not only when a farmer has himself or herself received a pay-out from an insurance company but when other farmers social groups have received a pay-out. Investigation has shown that social networks play an important role in disseminating insurance information. Cole et al. (2013) adds that social networks have a large significant effects especially on insurance demand. In contrast to his view Dercon et al. (2012) assess the impact of peer referrals for health insurance participation and found out that referrals have a negative influence on insurance demands, others added that the negative effects of them may be due to lack of trust of the insurance institution.

c. Education and awareness

Education has posited a major factor in insurance demand. According to the German institute for Economic Research (2009), they highlighted that educating customers can be a potential challenge to developing the micro insurance sector. They point out the demand for insurance correlates with customers' perceptions and their beliefs. Study by Kamau (2013) disagrees the contribution of education to the low insurance penetration and also (Jose and Valluru 1997) agrees that education level of the farmer had little effect on the decision by the farmer to purchase insurance in Nesbraka. According to Siegel et al. (2001) some insurance firms provide information and conduct education campaigns among low income households, educating them on the importance of risk protection using micro insurance schemes and also explaining the difference between conventional and micro insurance products. The study notes that participation in the purchase decision has to tally with customer's perception of the benefits and a clear understanding of what insurance means so that they avoid resentment.

d. Religion

Religion and some religious beliefs discourage individuals from taking insurance covers. Gheysens and Gunther (2012), explains religion is somehow related to risk attitudes as well as a sense of cohesion within a certain area. Cole et al. (2012) adds by saying those with what they regard as strong faith individuals/group of people tend to rely solely on God which results in more risk taking. Another study by Noussaire (2012) does not conform to it, the researcher explains that more religious people demonstrate higher levels of risk aversion. Several cross country studies measure insurance demand in Islamic countries, have found a negative correlation between insurance demand and religion (Noussaire (2012)).

2.6.4 Structural Factors

a. Product design

The demographics of the market targeted for micro insurance products must be simplified with minimum restrictions or exclusions. According to Churchill (2002) the researcher looked at the importance of appropriate product design and concluded by saying we have to be aware of the risks that the low income households face, how often and the resulting losses. If the client voice their preferences it will go a long way towards appropriate product design (Churchill 2007) consumers do not want to be overwhelmed with materials about the product, the simpler the product the better the understanding which will eventually enhance uptake. Florida Medical study the respondents complained about being too much overwhelmed by a product in the report say that same respondents were annoyed or put off.

b. Distribution Channels

The distribution channel that providers use to reach their customers is very crucial in product demand and awareness. Njuguna and Arunga (2012) alluded on the risks are immanent in micro insurance is inadequacy of distribution channel. Roth et al. (2007) reveals that micro insurance products are distributed through post offices, on profit making organisations (NGOs), MFI and telecommunications companies. One of the strategies used by micro insurance institution in India called BASIX- to sell their rainfall shortage insurance was to use an intermediary who was a trusted leader in the community to sell their product, who then informed other households about the product and hold marketing meetings. Ngoima (2013) attempts to answer the question on the role of agents in insurance uptake he classified agents into brokers. MFI and commercial banks have a direct link with customers and therefore are directly involved in marketing micro insurance products. MFI charge lower premiums hence their distribution costs are minimised (Mahul and Stutley 2010), relative to insurance companies that are constrained by lack of low costs distribution channels which reach out the poor households market (Njuguna and Arunga, 2012). Therefore the Zimbabwean Micro insurance Framework (2016) points out that for micro insurance to succeed in the country there should be a model for sharing the cost and profits with distributors.

6.5 Government schemes

Government schemes and policies are crucial in improving farmer participation especially in agriculture insurance. The schemes outreach for very low income people, most insurance products supported by the government would have strict market, design and rating methodology (ILO 2009). According to Akpan et al., (2015) they offer tax relief and incentives for education and also awareness campaigns for micro insurance products, to most farmers in Africa government remains their main source of inputs in most of their agriculture related activities. In an instance they distribute scarce public resources to the poorest of the poor. According to Nxumalo and Oladele (2013) explains that to determine which groups to subsidise and to what extent and for how long it's ultimately a political question but which needs to be informed by a sound understanding of the poor population. Akpan et al., (2015) agrees with the statement, membership in political party or involvement in any political movement increases the chance of a farmer or a village to participate in agriculture insurance. Sithole, Job and Micah (2014) had a contracting view they said when farmers do not have equal access or opportunity to government owned programmes the essence of participation is defeated. Farmers' participation plays a vital role in economic development and poverty reduction (Nxumalo and Oladele, 2013). Others authors commented on the latter view by suggesting that for a viable and sustainable government schemes the population needs to be educated, and these schemes should be included the educational curriculum in all learning institutions so that information can be widely available.

2.7 Review of Empirical studies

Several studies have been done both on a local level and international level. In a study done by Lin Liyne and Zhu Yu (2006), an analysis was carried out on the determinants of social insurance participation in China cities. In the study the researcher used both primary and secondary data. Descriptive and regression analysis was used to analyse data, the research proves that social policies of the cities affected participation in index insurance uptake. It is also likely that participation may also be determined by a combination of gender, perceived need and income of the households

Some interesting insights has been drawn by Makaudze and Miranda (2009) who asserts on the determinants for farmer participation are, collateral requirements required by financiers for farm insurance, awareness through marketing , and cost of insurance in Nigeria. The researcher used both quantitative and qualitative research methodologies, for collection of the primary data, questioners were administered. They established that farmer who purchase insurance are likely to have experienced significant losses in the past. The nature of farming enterprise was also mentioned for example a tobacco farmer tends to insure because of high costs and profitability of that enterprise. This has an overall effect in increasing agriculture insurance uptake.

In South Africa Nxumalo and Oladele (2013) examined factors affecting participation in agriculture projects in Zululand district. They used the probit regression model which revealed that land ownership, age, households head and non-farm income were important determinants of farmer's participation. The major constrains were limited resources, unavailability of land and lack of funding which affected the farmers.

According to Karlan,Osei, Akoto and Udry (2012) , they carried out a study in Ghana and found an increase in micro insurance scheme participation was due to the fact that the farmers trusted the insurer and their credibility of paying coverage. The researcher used content analysis to analyse the data to come up with such findings. The study further adds on as it explains that they was an increase in total farm investment among farmers and had purchased the rainfall insurance micro insurance product.

According to Sync Consultant (2006) in Ghana, they researched on multiple linear regression approach to assess the driving factors of farmer participation in weather index insurance. Their main objective was to establish a relationship between the driving factors and farmers participating in such a cover. The research also analysed the assumptions of multi linear regression model, the findings were that participation can actually be boosted through educating the public on agriculture insurance, MFIs participation to increase deliver channels and promotion of marketed insurance products and they was a correlation between them. To them these factors are appropriate to generate demand for insurance. They also saw in their findings that easing credit especially to the poor so that they can also have appropriate saving and borrowing instruments. These

sentiments may be closely related to those raised by Hill and Robles (2010) in their results when they conducted a pilot survey in Ethiopia .Their study mainly focused on the introduction of subsidies which was an important step toward meeting Ethiopian ambition for universal agriculture micro insurance.

Njuguna and Arunga (2013) carried out a study to establish the risks that are immanent in the micro insurance business and their suggestions are in line with Karlinjn and Peter (2011) carried a study in India and found the following factors being determinants of household's decisions to take up agriculture micro insurance. Their study was based on informal trust and building factors that affect demand in micro insurance, therefore age, education, sickness, financial status, risk aversion and location dummies were the proven factors which are important for insurance uptake.

The researcher findings of the various studies and researches discussed in this chapter are an indication that there are many factors which determine farmers to participate in agriculture micro insurance products.

2.8 The regulatory framework of micro insurance

The regulatory environment for micro insurance depends on the country and institution. To develop micro insurance there is need for micro insurance regulations, they should specify the registration process, the intermediary market, the delivery channel to be adopted and product approvals (Makore, 2011). Weidmaier-pfister (2004) notes that regulations can either promote or restrict insurance provision for low income earners. An appropriate legal and regulatory framework not only safeguards the interests of policy holders but also minimises institutional risk.

According to IAIS (2014) explains that many micro insurance providers are operating outside the insurance laws or legal loopholes. They are considerable risks that arise from such practises, neither the interests nor the premiums paid receive adequate cover , also institutional risks can arise such as mismanagement of funds are high. The purpose of the law in a society is to develop appropriate procedures and regulation that has to be adhered to when dealing among individuals so as to maintain economic stability (Saleemi, 2010).

East Africa research show that there is no specific regulatory framework for micro insurance in Kenya. Rwanda, Tanzania and Uganda when conducting their research. The study shows the framework in these four countries is generally uncondusive for the development and vibrancy of micro insurance. The key issues in the present framework being used relate to capitalisation requirements; conditions on ‘sole business line’ which in turn prohibits the development of structures that recognise service delivery channels conducive for low income earners such as MFIs, SACCOs, agents and brokers (Swiss re, 2015).

A paper issued by IAIS (2011) divides views into two aspects on how to regulate micro insurance. The first view is that micro insurance should be regulated in the same manner as other insurance related activities which in turn is called functional regulation as it would be regulated an activity line within organisations. The second view is that micro insurance should consist of practises that are totally different from the known normal insurance practices and regulated separately. This means separate insurance micro insurance act would be created and micro insurance would have a license which is different from the normal insurance companies. Uganda Insurance Association (2008) conducted a survey and results showed that Ugandan insurance companies clearly favour functional regulation. Few amendments were made on their insurance act so that it can be sufficient for use.

2.8.1 Regulatory risks for micro insurance

According to McCord (2011) regulatory risks depend on country’s institutors and product involved. Regulations for micro insurance often specify the delivery channel, intermediary market, and registration and product approvals. Enforcing the laws that govern the provision of conventional insurance on micro insurance hampers the growth of the sector (Churchill 2007, IAIS 2008). Makove (2011) documents the inhibiting regulations faced by the Kenyan industry as they are mink requirements, licensing, distribution channels and investment regulations.

The researcher notes that for any new product or idea it carries a certain type of risk or risks that need to be taken note of.

2.8.2 Regulation in Zimbabwe

Kakwere (2016), did a thorough analysis of the newly Zimbabwean regulatory framework. The present regulations governing insurance industry clearly favours large insurance companies that were able to meet the minimum capital and statutory deposit for the dedicated micro insurance. Minimum capital requirement stand at USD\$750 000 and a 5% statutory deposit, the 5% of minimum capital requirement to be lodged with commission or in a segregated account, it is available to an insurer as a last resort and to be replenished within 60 days. She added that appropriate reserves to be maintained and investment guidelines /asset requirement shall be set from time to time by the Commissioner. The framework is still a work in progress meant to take into account the issue of proportionality of regulation burden to the risk assured insurer.

The framework provides for the licensing of all entities that act as insurers or intermediaries, traditional insures and dedicated micro insures are included. For better reach of customers various distribution channels were approved by IPEC, that is licenced insurance brokers , banks, MFIs, post offices funeral homes, cooperatives, trade association, and SACCOs, social and religious associations and utility service providers (electricity, gas, telephone and mobile) among others are authorised to distribute micro insurance products. In terms of safeguarding the interests of micro insurance clients the present regulatory framework is not very adequate although they are positive signs that it will improve.

The government play very important role also in enabling and promoting a legal and regulatory framework. It is not yet clear if the present framework will encourage licensed interties to provide agriculture micro insurance which is the major discussion of this paper. The researcher of this paper has recognised two companies that are providing agriculture micro insurance (old mutual Zimbabwe and Ecofarmer a subsidiary of Econet holdings) the researcher has also recognised Minerva risk advisory who are acting as brokers/intermediaries to participating farmers and also Zimant Insurance that is promising to provide agriculture micro insurance soon distributing their product via Telecel Zimbabwe a mobile services provider. The reasons for low participation of insurance companies and other entities in this sector are attributed to lack of knowledge on the part of providers of conducting such a sophisticated product.

2.9 Summary

This chapter reviewed literature by various scholars and authors and discussed their view in defining micro insurance .The following factors were explicitly discussed in this chapter are price, wealth and income , basis risk, trust and peer effects, education and awareness, product design, government schemes, religion, age, gender, and distribution channels and the present regulatory framework in Zimbabwe.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Research methodology is the methodological, conceptual perusal of the methods applied to any area study. It comprises of principles associated with a branch of knowledge and also the theoretical scrutiny of the body. According Leedy & Ormrod (2010) defined research methodology as the researcher's general approach in carrying out the research project. It can be qualitative or quantitative or a mixture of both. Quantitative research focuses on generating numerical data in an attempt to solve problems and qualitative research also known as exploratory research which is a technique used to gather and gain understanding of reasons, opinions and motivator. The researcher used both primary and secondary data in data collection making this a dual methodology.

This chapter described the methodology used to test the objectives established in chapter one and the hypothesis in this chapter. It will further provide reason for instrument's that were used in data collection. The major aim of this chapter is to provide answers to the research questions and objectives outlined in chapter one as well as to adequately address the significance of the study.

3.1 Research philosophy

Research philosophy is defined as the development of the research background, research knowledge and its nature (Saunders *et al.*, 2009). The belief regards to the way data about a certain phenomenon should be gathered, analysed and used. The research philosophy adopted should contain significant assumptions about the way the researcher views the world. These assumptions will underpin the research strategy and methods opted for as part of the strategy. They are so many research philosophy that can be used, the researcher looked into the following research philosophy.

3.1.1 Realism

Realism is a research philosophy sharing the principles of positivism and interpretivism (Blumberg *et al.*, 2011). Realism refers to the practical orientation that relies on hard facts and considers things as they are and not on what they might or should be. It relies on the idea of independence of reality from the human mind. Realism is divided into direct and critical realism. Direct realism portrays the world through personal human senses whereas critical realism argues that humans do experience the sensations and images of the real world. In the realistic view, there are social processes and forces beyond the control of humans, which affect their beliefs and behaviour, (Saunders *et al.*., 2009).

3.1.2 Interpretivism

It is a form of qualitative methodology that relies upon both the trained researcher and the human subject as the instruments to measure some phenomena. Rendering to Rubin & Babbie (2010) the purpose of research in Interpretivism is understanding and interpreting everyday events, experiences and social structures as well as the values people attach to these phenomena

Interpretivism research aims to understand and interpret the meaning in human behavior rather than to generalize and predict causes and effects (Neuman, 2000). Livesey (2011) believes that interpretivism as a method that sees the social world as something that can only be produced and reproduced on a daily basis by people. Interpretivism believes that reality is multiple and relative, it typically involves both observation and interviews.

3.1.3 Pragmatism

Pragmatism is the view that considers practical consequences or real effects to be vital components of both meaning and truth. It asserts that any theory that proves itself more successful in predicting and controlling our world than its rivals can be considered to be nearer the truth. It postulates that true ideas are those that we can assimilate, validate, corroborate and verify. The pragmatist view says that it is possible to work with both philosophies. It basically evaluates theories or beliefs in terms of the success of their practical application (Saunders *et al.*., 2009).

Advantages

- a. It is a method of thought with sufficient flexibility to appeal to individuals with divergent views in many respects
- b. It rejects rigid canons and dogmatic beliefs

Disadvantages

- a. As a result of its self-conscious focus on experimental learning and experimentation, as well as its tendency toward a pluralistic, tentative notion of truth, pragmatism alone seems unlikely to provide right answers to many disputed questions
- b. Pragmatism's rejection of fixed, abstract notions of right and wrong, while flexible and useful in some contexts may also risk falling into what the editors of Renaissance Symposium call "the quicksand of relativism".

3.1.4 Adopted philosophy

The researcher carried out the study under the pragmatic philosophy of research. Pragmatism is intuitively appealing as it avoids the researcher engaging in what they see as rather pointless debates about such concepts as truth and reality and focusing on what is of value to the researcher in whatever way the researcher deems appropriate

This philosophy is most appropriate because the literature review brought in different angles of theories on the determinants of farmer participating in micro insurance products. However, in these studies, scholars did not necessarily elucidate the relationship of the variables and their effectiveness in coming up with the major factors that drive a small holder farmer to purchase agriculture micro insurance. The researcher intended on analysing the finding of the theories by scholars who published articles and textbooks on agriculture micro insurance, and consolidate with the primary data obtained from the field. Therefore, the pragmatic philosophy most appropriate as was the most flexible of all philosophies discussed above.

3.2 Research design

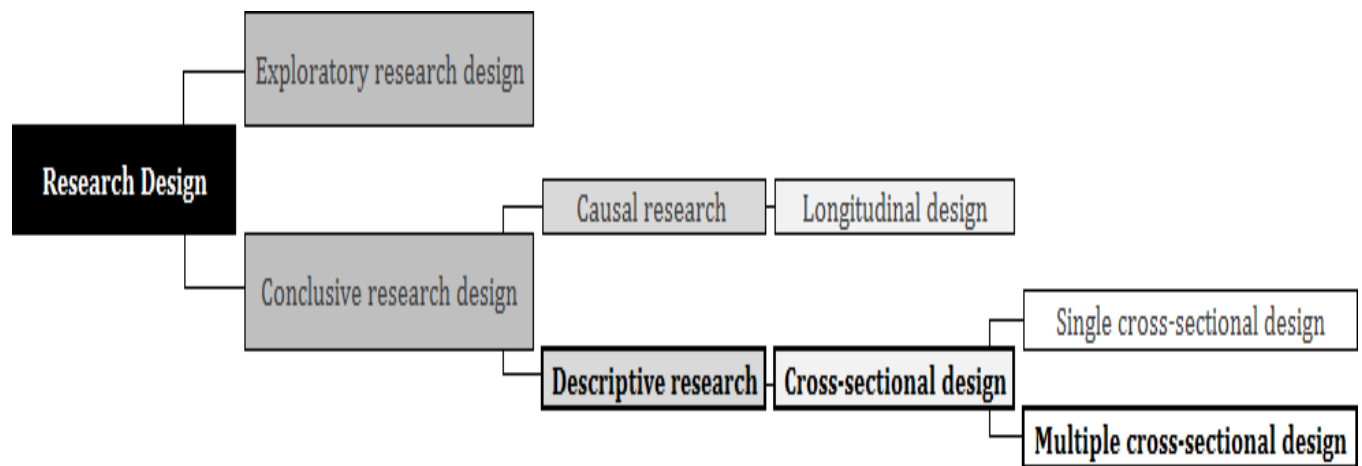
According to Barbie (2008) research design is best described as a plan, blueprint for conducting a research. Welman et al. (2009) on the other hand describes a research design as an overall plan, according to which the respondents of a proposed study are selected as well as the means of collecting data and generation. It should provide a logical way of activities that allows the reader of the project to see the connections between the research question and in the introductory chapter, the approach adopted to address the imposed questions, the assumptions to the approach, how the data was collected and analysed as well as the findings and conclusions (Kuada, 2012). According to Bryn and Bell (2007), the different research designs are exploratory, casual and descriptive research design

Exploratory- According to Mbezi (2012) on exploratory research, said it is the systematic investigation of the relationship among two or more variables, it describes relationship and forecasts the effect of one variable on another. Such kind of research design is usually characterised by high degree of flexibility. This choice of research is mostly aimed to get adequate information to conduct a future / more systematic and widespread second study (Neuman 2003).

Casual-According to Bryman and Bell (2007) casual design refers to those studies that examines whether one variable causes or determines the value of another variable. For example the question type is as follows under such research design; is smoking the main cause of lung cancer?

Descriptive- this type of research design is more structured compared to exploratory research design. The main aim of the design is to provide a valid representation of the factors that pertain the research question. The research design also tries to answer who, what, when, were and how questions, with the goal of making the researchers describe a process and from that make conclusions (Bryman and Bell 2007).

Figure 3.1: Shows the types of research designs



Source: Adapted from Malhotra (2010).

The researcher used the exploratory research design as her best methodology suited for this research. It is most useful for projects that are addressing a subject about which there are high levels of uncertainty and ignorance about the subject and also when the problem is not understood for example in agriculture micro insurance where little research has been conducted, compared to other micro insurance products. The exploratory design research was deployed to reveal essential facts and various perspective on the determinants of farmer participation in agriculture micro insurance products in Zimbabwe

3.3 Population and Sample

3.3.1 Target population

A set of all members about which a study intends to make reference inferences defines a population (Albright et al., 2006). Saunders et al. (2007), defined a target population as the group of individuals or members whom the researcher is interested to acquire information and make conclusions. Malhotra and Dash (2010) defined target population as the collection of elements or objects that possess the information sought by the researcher and about which inferences are to be made. Bourgie (2009) articulated that a target population is meant to alleviate the researcher to arrange and complete the research to get proposed results.

The population for this research was drawn from the peri urban districts of Harare which includes Chishawasha, which is located 32km east of Harare, Goromonzi located 32 km south east of Harare and Domboshava 27km north of Harare. Data obtained from the Zimbabwe Farmers Union revealed that Chishawasha had 20,000 small scale farmers, Goromonzi had 15 462 while Domboshava had 15 000 small scale farmers.

Small holder farmers are those farmers with a land holding of fifty acres or less. One acre of land is equivalent to 4,000 square meters of land. The area was selected due to availability of water and plentiful land, there is a lot of agriculture activities including maize cultivation, bean cultivation, livestock breeding and vegetables cultivation. Therefore major economic activities in the area include field crops cultivation and animal husbandry.

In addition the target population includes 2 operational managers from the 2 insurance companies providing micro insurance. The respondents were chosen because of their impeccable knowledge about insurance and micro insurance products. The regulator of insurance companies in Zimbabwe IPEC will act as the key informant.

3.4 Sample and Sampling Methods

Sampling can also be defined the selection of a subset of persons or things from a larger population, also known as a sampling frame (Scott & Morrison, 2007). It can also be viewed as the formulated framework designed with the intention of representing the particular population (Neuman, 2011). Sampling is a process whereby a sub-set of the target population is selected. A sample is a subset of the target population that is selected for research and from which information is gathered. The process of sampling begins by specifying the target population (Mbedzi, 2012). Basically, there are two sampling techniques which may either be probability or non-probability sampling. This study draws from both techniques as it employed stratified probability sampling and convenience sampling and judgemental sampling, a non-probability sampling method.

Stratified sampling involves grouping the population into strata with each stratum requiring fairly uniform elements (Mbedzi, 2012). The stratified sampling techniques works when a population is divided into subgroups or strata's and a random sample is conducted in each group. These

subgroups can exhibit similar features including market share, capital position and others (Jewell, 2005). The peri-urban Harare was divided into 3 strata in relation to the districts, that is, Chishawasha, Goromonzi and Domboshava district. Stratified sampling helped in determining the contribution of each strata into the sample, so that each strata is appropriately represented. A strata with more farmers will contribute more into the sample, to ensure a representative sample.

Convenience Sampling involve selecting members who are available at the time of the study into the sample (Sekeran & Boagie, 2009). It is sometimes referred to as “haphazard” or “accidental” sampling (Mbedzi, 2012). In essence, it is the inclusion whoever happens to be available at the time. As such, after the peri urban Harare has been stratified into 3 strata, members were selected basing on convenience, taking care to include farmers who happened to be available so as to reduce the failure rate. It also helped to include members who were willing to participate in the study without much hustle.

3.5 Census method of data collection

Census method refers to the complete enumeration of a universe (Farooq, 2013). A universe may be a place, a group of people, or a specific locality through which we collect the data. Census method is necessary in cases where vast knowledge and accuracy is needed for example a population census. This method is also quite necessary in instances where the population is significantly small in order to acquire meaningful statistics. The researcher used census because they were only 2 insurance companies providing micro insurance and it's a very small population.

3.6 Sample size determination

Stratified random sampling was used in determining the sample size. Using this technique, the sample size of each stratum was in proportion to the number of subjects in the stratum or district in this case. Therefore, each stratum had the same sampling fraction. In order to achieve accurate results, participants were classified into three (3) main groups depending on the district of origin. Table 3.2 below shows participants per each district.

Table 3.2: District for the farmers

District	Number of farmers
Chishawasha	20000
Goromonzi	15462
Domboshava	15000
Total	50462

The krejcie morgan sample size table designed by Krejcie and Morgan in 1970 was used to calculate the sample size for the current study. A 95% confidence level was used with a margin error of 0.1 on the population of fifty thousand four hundred and sixty two (50462) participants. A sample size of ninety six (96) participants was obtained. This is in line with Matata et al. (2009) who argued that having 80 to 120 persons are adequate for most socio economic studies in the Sub Sahara Africa.

Following the determination of the sample size above, it was necessary to calculate the size of each strata. The outcome is presented in Table 3.3 below with values calculated using the formula:

Sample size of strata = size of entire sample/population size x strata size.

Table 3.3: Sample size per School

District	Number of farmers	Sample size in strata
Chishawasha	20000	$96/50462 \times 20000 = 38.04 = 38$
Goromonzi	15462	$96/50462 \times 15462 = 29.41 = 29$
Domboshava	15000	$96/50462 \times 15000 = 28.53 = 29$
Total	50462	96

Based on the above calculations a sample of 96 respondents was taken from the districts, with Chishawasha which had 20000 farmers contributing 38 respondents, Goromonzi which had 15462 contributing 29 respondents and Domboshava with 15000 contributing 29 respondents.

The sample size includes 2 operational managers from the two insurance companies providing micro insurance namely Old mutual short term insurance and Ecofarmer.

3.7 Research instruments and data collection

Accurate and systematic data collection is critical to conducting scientific research. Depending on research type, methods of data collection include; documents review, observations, questioning, measuring or a combination of different methods (Abawi, 2013).

3.7.1 Primary Data

Primary data is the information collected afresh and for the first time from a respondent. Due to its nature it is said to be original in character (Kothari, 2004). Primary data is more reliable, authentic and objective as it has not been published yet. Its validity is greater than secondary data as it has not been changed or altered by humans. Primary data is useful because there is limited published material on the subject under study and this data can be collected through the use of questionnaires or interviews. Furthermore primary data is important because it gives factual information about the outcomes of research or observation; it is like the eyewitness testimony at a trial.

3.7.1.1 Questionnaires

Nehru (2012), defines questionnaires as a form prepared to secure responses to certain questions. They are a list of closed ended and open ended questions given to respondents so as to collect information, these are mainly used to produce quantitative data and they will be distributed to various players in the industry. Forms are to be completed and returned by the respondents. The response are gathered in a standardized way and respondents should be told why the information is being collected and how the results will be beneficial. They should be asked to reply honestly

and told that if their response is negative this is just as useful as a more positive opinion. If possible the questionnaire should be anonymous.

Advantages of questionnaires

- a. They permit respondents time to consider their responses carefully without interference from, for example, an interviewer.
- b. They are cost effective as it is possible to provide questionnaires to large numbers of people simultaneously.
- c. Can address a large number of issues and questions of concern in a relatively efficient way, with the possibility of a high response rate.
- d. They may be mailed to respondents (although this approach may lower the response rate).
- e. They permit anonymity. It is usually argued that anonymity increases the rate of response and may increase the likelihood that responses reflect genuinely held opinions.

Disadvantages of questionnaires

- a. They may promote dishonesty as respondents may not be 100% truthful with their response.
- b. Feelings and meanings cannot be conveyed as questionnaires cannot fully capture emotions.
- c. Differences in understanding and interpretation hence distorting accurate and intended answers.

3.7.1.2. Web based questionnaires

A new and inevitably growing methodology is the use of internet based research. This would mean receiving an email on which you would click on address that would take you to a secure website to fill in a questionnaire.

Merits of web-based questionnaires:

- a. This type of research is often quicker and less detailed.
- b. Very cost effective.
- c. Saves on time for the researcher when hand delivering questionnaires.
- d. In line with the evolving technology, might be preferred by most organizations than completing a paper.

Demerits of web-based questionnaires:

- a. Excludes people who do not have a computer or are unable to access a computer.
- b. Need to have access to email addresses.
- c. Many worksites have screening mechanisms in place blocking access to employee emails.
- d. The validity of such surveys may be in question as people might be in a hurry to complete it and so might not give accurate responses.

3.7.1.3 Personal Interviews

Interviews are methods of gathering information through oral quiz using a set of pre-planned core questions. According to Shneiderman & Plaisant (2010), interviews are very productive since the interviewer pursues specific issues of concern that will lead to focused and constructive suggestions. In analysis interview responses are more qualitative in nature as they highly rely on experience and opinion in relation to knowledge of the respondent on the subject matter than actual information.

Merits of interviewing

- a. There is interaction and simultaneous influence on one another
- b. Feedback is obtained on the spot
- c. Facts are presented as they are and no emphasis will be place on the researcher's interpretation

Demerits of interviews

- a. Interviewers know that they can be identified and as such they may be unwilling to give out sensitive information
- b. It may be difficult for the interview to be allocated interview time during time during busy schedules
- c. Fear of victimization may lead the interview to give only the theoretical aspects of the problem rather than the practical aspect since the theoretical aspects would be supported by written procedures.

The researcher was conducting a quantitative primary data collection hence structured closed questionnaires were used to obtain the primary data. Despite the few demerits which were seen to have been associated with questionnaires, they were the most efficient and effective primary data collection methods suitable for this study that is why the researcher adopted them.

3.7.2 Secondary Data

Secondary data is the data that has been collected already and readily available from other sources. Such is cheaper and easily accessible than the primary data and also may be available when primary data cannot be obtained at all. It excludes any published or unpublished work that is one step removed from original source, usually describing, summarizing, analyzing, evaluating, or based on primary source materials. Secondary source include any published or unpublished work that is one step removed from the original source, usually describing, summarizing, analysing, evaluating, derived from, or based on primary source materials. Secondary sources include; textbooks, review articles, critical analysis essays, journals and biographies and most can be accessed through use of internet, actual books and newspapers.

Advantages of secondary data include:

- a. It is economical as it saves on effort, time and money.

- b. Aids easy accessibility of information.
- c. It helps to improve the understanding of the problem, as well as providing a basis for comparison for the data that is collected by the researcher.

Disadvantages of Secondary data

- a. Secondary data can be associated with lack of data control over data quality (Saunders, 2009).
- b. Data can be outdated or irrelevant to the study in question.

3.7.2.1 The Internet

The internet unarguably forms the most endowed 'library' ever. The researcher accessed e-journals, e-books and works by other scholars and organizations via the internet. With ease, the researcher could check both technological and legal developments in electrical safety of other countries. Some of the questionnaires were sent to respondents via e-mail.

Advantages of the internet

- a. Provides the researcher with current updated information.
- b. Renders one the ability to obtain a large sample, which increases statistical power.
- c. Data is automatically coded hence data entry errors are minimized.
- d. Reduces cost of conducting research.

Disadvantages of the internet

- a. Internet speed and efficiency is dependent upon how congested the network server is and the higher the congestion, the slower it will be to retrieve information there from.
- b. The internet is vulnerable to the virus risk. Computer viruses can easily corrupt documents before or after the researcher completes his work.

3.7.2.3 Textbooks and Journals

The researcher made reference to numerous text books and journals in this investigation towards the determinants of farmer participation in agriculture micro insurance Zimbabwe and other international countries.

3.8 Variables in the study

The variables in the study are presented in Table 3.4. The primary instrument shall be a questionnaire whose questions shall require binary choice response as well as continuous response. These variables are shown in the way they will be coded for instance Response (no) shall generally be coded as (2) while the response (yes) coded as (1).

Table 3.4: Variable identification for the study

Variables	Interpretation	Interpretation
x_1	Price	1= affect, 2= doesn't affect
x_2	Education and awareness	1=yes,2=no
x_3	Government schemes	1= affect, 2= doesn't affect
x_4	Lack of trust	1=yes,2=no
x_5	No adequate resources	1=yes,2=no
x_6	Gender related issues	1= affect, 2= doesn't affect
x_7	Product accessibility	1=yes,2=no
x_8	Influence from peers	1=yes,2=no
x_9	Fear of being denied full indemnification	1=doesn't affect, 2=affect
x_{10}	Product coverage not adequate	1=yes,2=no
x_{11}	Religious restriction	1=doesn't affect, 2=affect
x_{12}	Age	1=yes,2=no

3.8.1 Dependent variable

According Barlett, Kotrlik and Higgins (2011) a dependent variable anything that has a quantity or quality that varies. The dependent variable is the variable the researcher is interested in. The dependent variable in this study is farmer participation- this included farmers who are currently small holder farmers at the time of the research who have purchased agriculture micro insurance and those who had been involved in small holder farming and had purchased agriculture micro insurance in the past. The research considered all small holder farmers in Harare region who have confirmed affirmative to the purchased this product and compared them to those who are farmers and have never participate in the purchase of it.

3.8.2 Independent variable

An independent variable is variable believed to affect the dependent variable Barlett , Kotrlik and Higgins (2011). The independent variable in this paper encompasses factors that determine the purchasing decision for agriculture micro insurance products which are economic factors (price, wealth and access to credit), structural factors (distribution channels, product design and age and financial literacy and education), cultural and social factors (trust and peer effects, risk aversion and basis risk and financial literacy and education), personal and demographic factors (gender) and government schemes. The selection of variable was guided by findings of the research and the theoretical foundation.

3.9 Data analysis

3.9.1 Stepwise Regression

According to Zhang (2016) stepwise is automatically performed by a statistical package. Stepwise regression is a method of building up a model by adding or removing the variables based solely on the t-statistics or using the T-tests or F-tests. It can be called a combination of the forward and backward selection method. In the research there are just less than 12 variables that determine farmer participation in agriculture micro insurance and the researcher aims at looking at few variables that determine their participation to a greater extend by using the stepwise regression.

Three approaches that can be used; forward selection, backward selection and both forward and backward selection at the same time.

3.9.2 Backward elimination

Zhang (2016) alluded that backward elimination is a stepwise approach, the process works by starting with all the variables in the model and eliminate one by one which ever variable that is less significant in the model. The researcher will use this method as the most appropriate for her study. It works way down and not up. The process is repeated until only significant variables are left.

3.9.3 Cross tabulation

This type of table is used to describe the relationship between two categorical variables, it is also known as contingency table analysis. It is a joint frequency distribution of cases based on two or more variable of interest. The SPSS provides one with the flexibility of choosing a variable the researcher find appropriate and on which axis. It allows one to display percentages so that the output will not be cluttered.

3.10 Model specification

Logistics regression model

Quite a number of researchers that deal with similar issues of participation have so far conducted and this research borrows much from such authorities as Jutting (2003) and Weinberg (2001) who have adopted logistics regression models in their studies. This study adopts almost the same LOGISTIC procedure which was developed from the need to analyse qualitative (dichotomous) dependent variable within the regression framework. Logistics Regression Analysis is a statistical technique for analysing data in which they are one or more independent variables that determine outcome. It is also often used to investigate the relationship between discrete response and a set of explanatory variables. In any regression analysis the key quantity is the mean value of the response variable given the values of the independent variable:

$$E(Y/x) = \beta_0 + \beta_1 x$$

Where Y -denotes the response variable, X -denotes a value of the independent variable and β_i - values denote the model parameters. The quantity is called the conditional mean or the expected value of Y given the value of x. the dependent variable of the research is, FARMER PARTICIPATION, and stand for 'was the respondent already having any form of agriculture micro insurance? '. The sampled data was categorized as either the participant had any form of micro insurance or not. The modified logistic model used the following equation;

$$g(x) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 \dots + \beta_n x_n + \mu$$

Where g(x) stands for the function of the independent variables:

β_0 is the constant of regression

$\beta_1, \beta_2, \beta_3, \beta_4, \dots, \beta_n$ are coefficients of regression and μ is an error term

Logistic regression determines the coefficients that make the observed outcome (insured or not insured for agriculture micro insurance) most likely using the maximum likelihood technique.

Model Assumption

According to Wright (1995) logistic regression does not assume a linear relationship between the dependent and independent variables, the dependent variables do not need to be normally distributed, there is no homogeneity of variance assumption, in other words, the variances do not have to be the same within categories, normally distributed error terms are not assumed and the independent variables do not have to be interval or unbounded.

3.10.1 Wald statistic

Wald statistic assess the contribution of individual predictors in a given model. The Wald statistic is used to assess the significance of coefficients. It is the ratio of the square (t^2) of the regression coefficient to the square of the standard error of the coefficient. Only significant coefficients are included in the logistic regression equation.

3.11 Software

The researcher will use Statistical Package for Social Sciences (SPSS) 16.0 to analyse the given data. SPSS is a package which is user friendly and the data is not distorted. The package also helps in data presentation, the data will be in graphs and tableau where the data is summarized better

3.12 Tests of significant.

To ensure model is fit for this study, the data was tested to ensure regression assumptions were not violated. The regression assumptions tested for were:

- 1) Linear relationship
- 2) Multivariate normality
- 3) No or little multicollinearity
- 4) No auto correlation
- 5) Homoscedasticity

The t-tests were employed to determine the significance of the constant term and the coefficients of terms. The importance of each of the regressions was determined by carrying out the t-test at 95% confidence level. The coefficient of determination adjusted R² was used to measure the extent to which independent variables explained the variations in the dependent variable. The researcher used adjusted R² as it measured the coefficient of determination better (Kanguri, 2016)

3.13 Conclusion

This chapter was organized to include introduction, research design, population and determination of sample size. The tools for data collection that is the questionnaire and their relevance to this study were also elaborated, going down to research general guidelines. Elaboration and explanation of the issues related to research methodology were also highlighted that included the choices of research methodology, philosophy, data analysis and data collection methods and the same was justified. Backward selection was used to come up with the significant factors. Logistics was then used to come up with significant factors sequentially. The results of the data gathering exercise will be presented and analysed in the next chapter.

CHAPTER 4

RESULTS, ANALYSIS AND INTERPRETATION

4.0 Introduction

Having successfully described the methodology intended for use in this research, this chapter presents the results obtained from the actual analysis of the data. Primary data for the study was gathered from the questionnaires administered to farmers and interviews carried out to insurance providers. Secondary data was gathered from documentary review from newspapers, biographies from the internet and progress reports made available to the researcher. An analysis of the primary and secondary data was conducted with regards to areas outlined in the research objectives. The presentation was in tabular form and graphic form while analysis was made using frequencies, percentages. The statistical data analysis was conducted using SPSS Statistics 16.0.

- I. To define micro insurance and identify its potential benefits
- II. To determine the relationship between (Price, wealth and income, education and awareness, basis risk, trust, peer influence, religion, product design, age, distribution channel, government schemes and gender) and farmer participation in agriculture micro insurance.

4.1 Questioner response rate

The researcher distributed 96 questionnaires to farmer's .This was done so as to get responses from all cross sections of the experienced study population. The response rate is an important factor as it ensures that the data is reliable. According to Babbie and Mouton (2001), a response rate of 50% is adequate to conduct an analysis, while 60% and 80% are considered as good and very good respectively. The summary of the response rate is given in table 4.1 below

Table 4.1: Questionnaire response rate

	Target	Successful	Success rate
Questionnaires	96	84	87.5
Interviews	2	2	100

Source: Research data (2017)

Ninety six (96) questionnaires were distributed to farmers. Eighty four (84) questionnaires were returned, correctly filled in that they were considered useful for analysis. The other twelve (12) were never returned, the researcher made an effort to recover the unreturned questioners and it was fruitless. Therefore, an 87.5% questionnaire response rate was attained and it was concluded that it was possible to continue with the analysis of the data collected so as to make the necessary recommendations. A higher response rate could be attributed to the researcher's approach of personal administration of questionnaires as follow ups were done to reduce non-responses. A total of two (2) interviews with management were intended of which all of them were successful yielding 100% interview success rate. The management are often busy, so in order to avoid cancellation of some appointments, the interviews were held in the comfort of the interviewees' offices and each session took at least twenty (20) minutes.

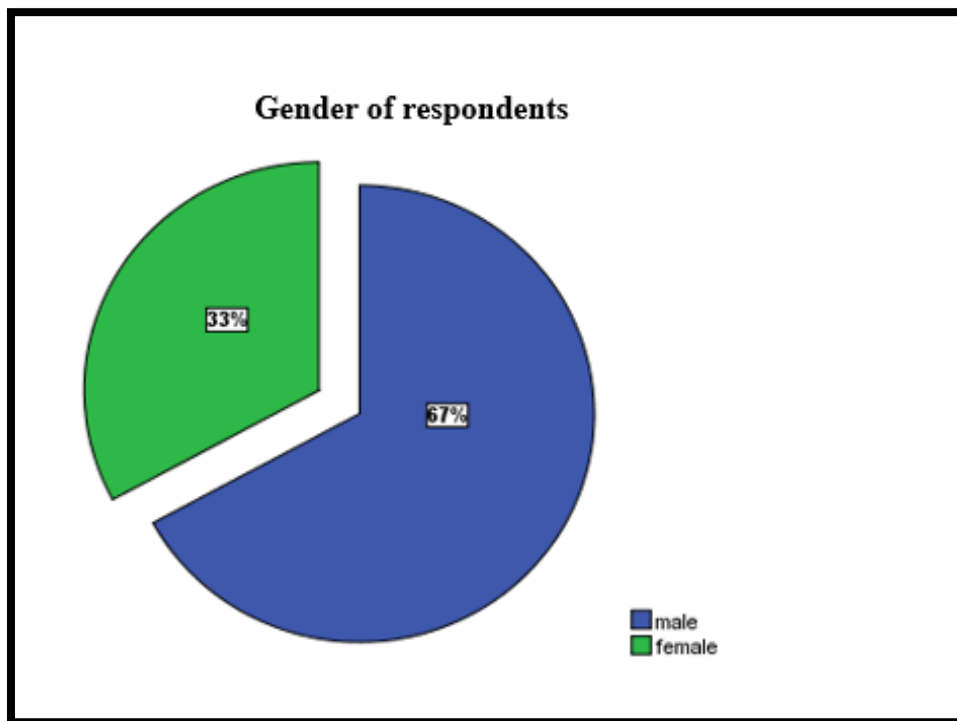
4.2 General information

The study identifies the general information of the respondents which was not included in the objectives of this research, it felt necessary to present this information as the respondent's characteristics may have a significant influence on their understanding on the determinants that probe farmers to participate in agriculture micro insurance. General information sought in this study included the respondents: gender, level of education and age.

4.2.1 Gender of respondents

This question required the respondents to indicate their gender. The study acknowledged the likelihood of gender to influence the decision to purchase agriculture micro insurance. Figure 4.1 is a presentation of the results that were obtained.

Figure 4.1 Gender of respondents



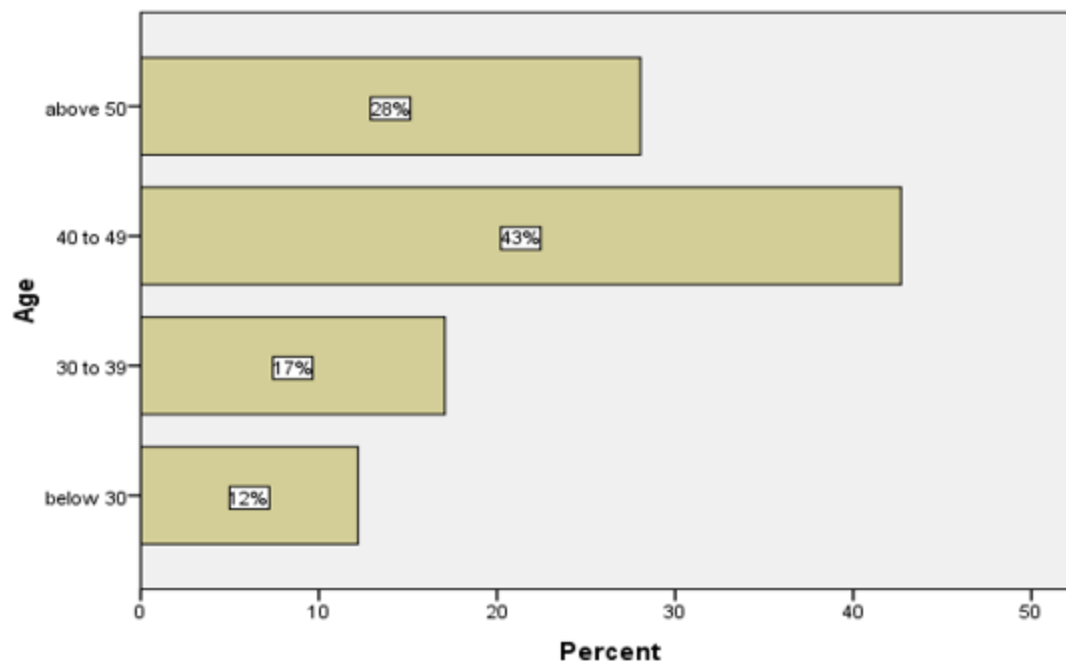
Source: SPSS Output

The results show that most of the respondents 67% were male and while 33% were female. The gender disparity in the sample is a typical of the situation in many households in Zimbabwe where the patriarchal system has created an environment whereby the males are the householders. However, despite the disparity, both gender were represented. Therefore it made it possible to obtain views from both gender on the factors that affect their decision to purchase micro insurance.

4.2.2 Age of respondents

The respondents were asked to indicate their age. Figure 4.2 below is a presentation of the findings on age distribution of the respondents.

Figure 4.2 Age of respondents

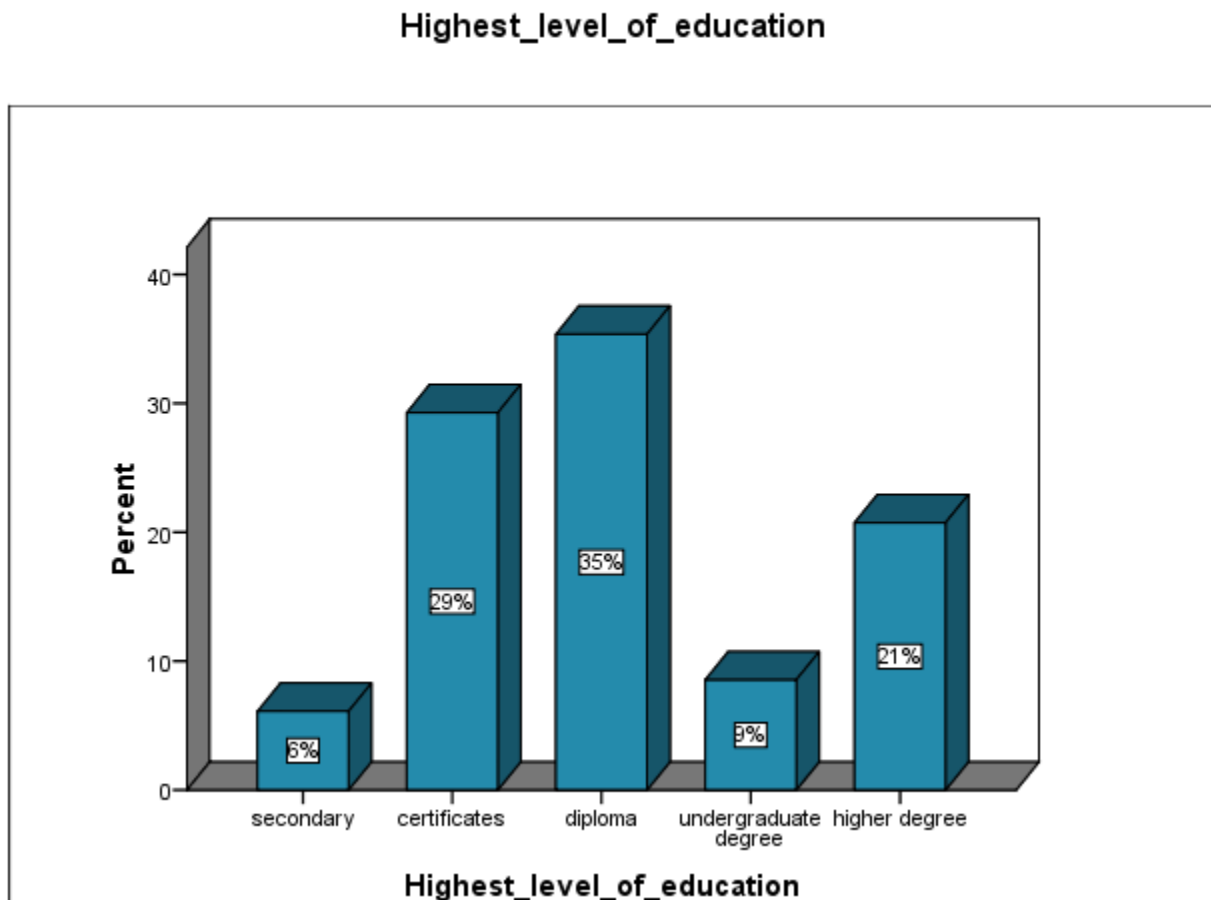


Source: SPSS Output

Highest age of the respondents had 40 to 49 years 43%, followed 50 years 28%, 30 to 39 years 17%, and those below 30 years 12%. All ages were represented to avoid age related bias in terms of the decision to acquire agriculture micro insurance. This result is in line with the sentiments that another author says, that age has a positive demand in farmer participation (Chen et al., 2013)

4.2.3 Highest level of education

General information of respondents also included their highest level of education. Figure 4.3 below is a presentation of the findings on respondents' education.



Source: SPSS Output

Figure 4.3: Highest level of education of respondents

Most of the respondents held a diploma 35% as their highest academic qualification. This was followed by certificates 29%, higher degree 21%, undergraduate degree 9% and secondary 6%. It has been shown that most respondents were equally qualified to be able to interpret and address the questions, the researcher only needed understanding and correct interpretation of the questions regardless of the level of academic qualification. It was resolved that meaningful conclusions can be derived from the data gathered hence reliance can be placed on the data. According to Jose and Valluru (1997) argues that ag that education level of the farmer had little effect on the decision by the farmer to purchase insurance however in contrast, (Jasnosi and Tobacman 2013) explains that

farmers with limited education may nimbly reason to a more risk reduction method by simply changing their farming practises.

4.3 Micro insurance and its potential benefits

The study sought to define micro insurance and identify its potential benefits. This section first considered information regarding risks associated with agricultural activities and their impacts.

4.3.1 Farm activities versus production risks

They were two questions which needed the respondents to firstly indicate the farm activity or activities that they major in followed by indicating the production risks that they face. Table 4.2 is a presentation of the results that were obtained

Table 4.2: farming activities and production risks

		Farm risk					
		Flooding	Hailstorm	Drought	Other	Theft	Total
Farm activity	Crop	12.2%	15.9%	12.2%	7.3%	13.4%	61.0%
	Livestock			8.5%	3.7%	11.0%	23.2%
	Both	3.7%	2.4%	2.4%	2.4%	4.9%	15.9%
Total		15.9%	18.3%	23.2%	13.4%	29.3%	100.0%

Source: SPSS Output

From the above results it shows that most farmers are majoring in crop activities having the highest percentage of 61%, followed by livestock with 23.2% whilst both the activities had 15.9%. Our sample comprised of mainly farmers practicing crop production. This is typical of the Zimbabwean situation as most farmers are engaged in crop production. According to Micro insurance Centre

(2008) the Sub Saharan region mainly consist of famers that are practising crop production relative to livestock production. The findings are therefore in line with the researchers findings.

The most sited risk was theft with 29.3% followed by drought with 23.2%, Hailstorm with 18.3%, flooding with 15.9% and other risks with 13.4%. Therefore it is likely that the farmers were mainly concerned with the risk of theft and drought. The reason why theft is major risk in cited farmers is due to the Zimbabwe economic conditions that have 99.9% unemployment rate as cited by Zimbabwe National Statistics Agency (Zimstats) latest report in 2016.

A close analysis revealed that farmers in crop production were mainly concerned with hailstorm risks 15.9% and theft 13.4%. Those in livestock production were mainly concerned with risk of theft 11.0% and drought 8.5%.

This result was confirmed by the findings of interviews. Interviewee 1 suggested that the risk of theft was the major concern for farmers especially those in livestock production .The same view was shared by Interviewee 2 though he added drought as another major consideration for farmers in Harare.

4.3.2 Effect of risks on agricultural activities

The respondent were required to indicate the effect of the aforementioned risks and the extent to which these risks affected agricultural output. Table 4.3 is cross tabulation of the effect of risks against the extent to which these risks affected agricultural product.

Table 4.3 Extent of the effects of agriculture activities.

		No	Less	Moderate	Large	Very large	
Effects of risks	Livestock mortality	4.9%	4.9%	6.1%	6.1%	1.2%	23.2%
	Crop failure	7.3%	12.2%	11.0%	11.0%	2.4%	43.9%
	Other	3.7%	8.5%	11.0%	4.9%	4.9%	32.9%
Total		15.9%	25.6%	28.0%	22.0%	8.5%	100.0%

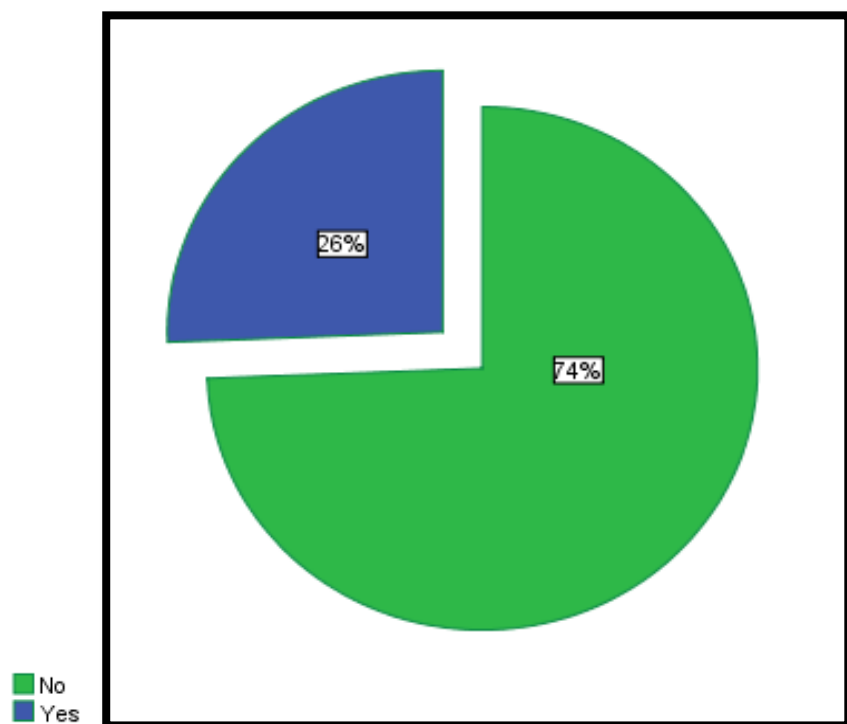
Source: SPSS Output

From the above results farmers involved in livestock production have a moderate 6.1% to large 6.1% exposure as shown with their livestock mortality. Those farmers involved in crop production are facing less 12.2% to moderate 11.0% crop failure due to the above mentioned risks. Other risks such as theft and veld fire have got a moderate 11.0% effect on the farmers output. A close analysis we will find that effects of all on an average basis are moderate 28.0%, this is due the variations in location and the farming activity the farmer is practising. This is supported by the findings of McCord (2012), farmers over the years due to experience have devised risk management tool that limit their loss exposure even without any form of insurance.

4.3.3 Agriculture micro insurance coverage

The respondents were asked to state if they have any form of agriculture micro insurance and the following Table 4.4 will reveal the findings.

Figure 4.4 Micro insurance coverage



Source: SPSS Output

From the above results 74% of the targeted population do not have agriculture micro insurance and only 26% of the respondents are insured. Therefore a greater proportion of farmers are not taking agriculture micro insurance. This is typical sign of why the agriculture micro insurance field has a low uptake as noted by Swiss Re (2010) demand for micro insurance in developing countries is low and increasing slowly relative to demand in developed countries in addition this was also in line with the Zimbabwe insurance penetration rate of new products which stands at 2% (BH24 Reporter, 2017)

4.4 Relationship between factors and farmer participation in agriculture micro insurance in Zimbabwe

The study sought to present the major factors for farmer participation in agriculture micro insurance in Zimbabwe

4.4.1 Regression using Backward Selection

A stepwise selection method was performed to eliminate those variables having insignificant coefficients. The backward selection method was applied as the potential variables are modest sized set. All the twelve factors that were considered as having an impact on farmer participation in agriculture micro insurance in Zimbabwe in this study are represented in Table 4.4. No variables were eliminated in the first step 1.

Table 4.4: Factors in the equation in the first step

Step	Factors	Significance
1	Price	0.000
	Education and awareness	0.154
	Government schemes	0.000
	Lack of trust	0.115
	Gender related issues	0.291
	No adequate resources	0.000
	Product accessibility	0.423
	Influence from peers	0.112
	Fear of being denied full indemnification	0.351
	Product coverage inadequacy	0.221

	Religious restriction	0.385
	Age	0.133

Table 4.5: Factors in the equation in the second and third step

Step	Factors	Significance
2	Price	0.000
	Education and awareness	0.129
	Government schemes	0.000
	Lack of trust	0.100
	Gender related issues	0.285
	No adequate resources	0.000
	Influence from peers	0.107
	Fear of being denied full indemnification	0.252
	Product coverage inadequacy	0.193
	Religious restriction	0.385
	Age	0.026
Step	Factors	Significance
3	Price	0.000
	Education and awareness	0.114
	Government schemes	0.099

	Lack of trust	0.092
	Gender related issues	0.154
	No adequate resources	0.000
	Influence from peers	0.110
	Fear of being denied full indemnification	0.252
	Product coverage inadequacy	0.153
	Age	0.126

Table 4.5 shows the elimination process that took place in stepwise. In step two Product accessibility was eliminated with a significance of 0.423 and in step three, Religion restrictions was eliminated with a significant level 0.385. The significant level is 0.05.

Table 4.6: Factors in step four to six

Step	Factors	Significance
4	Price	0.000
	Education and awareness	0.129
	Government schemes	0.000
	Lack of trust	0.095
	Gender related issues	0.085
	No adequate resources	0.000
	Influence from peers	0.110
	Product coverage inadequacy	0.067

	Age	0.166
Step	Factors	Significance
5	Price	0.000
	Education and awareness	0.114
	Age related factors	0.000
	Lack of trust	0.115
	Gender related issues	0.001
	No adequate resources	0.000
	Influence from peers	0.120
	Product coverage inadequacy	0.003
Step	Factors	Significance
6	Price	0.000
	Education and awareness	0.109
	Government schemes	0.000
	Lack of trust	0.075
	Gender related issues	0.133
	No adequate resources	0.000
	Product coverage inadequacy	0.001

Step four to six show the elimination of fear of being denied full indemnification; Poor customer experience and Influence from peers. These had insignificant p -values, that is greater than 0.05.

Factors in the equation in the last step

This section focused on the last stage in the elimination process. The results are shown in Table 4.7.

Table 4.7: Factors in the equation in the last step

Step	Factors	Significance
7	Price	0.000
	Education and awareness	0.001
	Government schemes	0.000
	Lack of trust	0.005
	No adequate resources	0.000
	Product coverage inadequacy	0.003

The final stage shows the last stem of the stepwise elimination process. It shows the factors with p -value less than 0.05, hence these were deemed significant. Therefore, only six factors were deemed significant in the study

4.4.2 Logistic Regression Model

A regression model was performed to assess the effect of the explanatory variables on farmer participation in agriculture micro insurance.

Model Summary

Table 4.11 below is a representation of the model summary.

Table 4.11: Model Summary

Step	-2 Log likelihood	Cox and Snell R Square	Nagelkerke R Square
7	115.387	0.546	0.667

Source: SPSS Output

The -2 Log likelihood values for the stepwise selection in the above the goodness of fit of the model on the data. The current study yielded a -2 Log likelihood value for of 115.387 with a Cox and Snell R Square of 54.6% and the Nagelkerke R Square of 66.7%. The Cox and Snell R Square value and the Nagelkerke R Square value helps to gauge the substantive significance of the model. Therefore, the significance of the model for this study ranges from 54.6% to 66.7%. This denotes a high significance level, and denotes that the Logistic regression model is a good fit on the data.

Table 4.12 indicates the variables that are used to come up with the final model at the 5% significance level.

Table 4.12: Final Model and Variables in the equation

Factors	(β)	S.E	Wald	Df	Sig.	$Exp(\beta)$
Price	-1.817	0.392	23.754	1	0.000	0.163
Education and awareness	1.047	0.226	27.748	1	0.001	2.849
Government schemes	0.652	0.268	8.582	1	0.000	1.919
Lack of trust	-0.869	0.264	12.843	1	0.005	0.419
No adequate resources	0.851	0.289	9.776	1	0.000	2.342
Product coverage not adequate	-0.664	0.329	5.648	1	0.003	0.515
Constant	1.885	0.904	3.347	1	0.054	6.586

Source: SPSS Output

Interpretation of the Model

The fitted model becomes:

$$Y = 1.885 - 1.817x_1 + 1.047x_2 + 0.652x_3 - 0.869x_4 + 0.851x_5 - 0.664x_{10} + e$$

Where: x_1 is the price,

x_2 is Education and Awareness,

x_3 is Government schemes,

x_4 is lack of trust,

x_5 is No adequate resources, and

x_{10} is Product coverage not adequate.

The intercept represents the average log odds of success (farmer participation in agricultural micro insurance) when all of the explanatory variables are zero. In such case, the following holds $\exp(\beta) = \exp(1.885) \approx (6.586)$. This implies that there are approximately 6.586 chances of farmers participating in agricultural micro insurance. The odds ratio were converted to probabilities to make them probability predictions

$$Probability = \frac{odds}{1 + odds}$$

Substituting the values, we get:

$$Probability = \frac{6.586}{1 + 6.586} = 0.868$$

The result obtained indicates that there is an 86.8% chance that a farmer will participate in agriculture micro insurance, without considering any explanatory variables

Control variables

The model included some control variables in relation to the demographics of the respondents such as gender, which was necessary since age and gender influence decision of an individual to purchase micro insurance. However, gender and age respondents were considered as control variable as these variable will not influence policy decisions regarding encouraging the uptake of agriculture micro insurance.

Significant variables

This section considers variables that were found to be significant in influencing the uptake of agriculture micro insurance. These variables include price, government schemes, education and awareness, lack of trust and product design.

Price

Alpha level 5% therefore p value < 0.05 {statistically significant}, p value > 0.05 (statistically not significant).

H_1 : Price is a key determinant that affects farmer participation in agriculture micro insurance.

The coefficient of price of the agriculture micro insurance is -1.817, this implies that $exp(\beta) = exp(-1.817) \approx (0.163)$. If (β_i) is negative, the factor will be less than one, which means that the odds are decreased. Therefore, a unit increase in the price of the agriculture micro insurance, *ceteris paribus*, leads to a decrease in the odds of increase in farmer participation in agriculture micro insurance. Thus, a high value of price of the agriculture micro insurance is associated with a decrease in farmer participation in agriculture micro insurance. This notion is supported by (Cole et al., 2013) who used a simple model of demand after a research design of randomized treatment for varying discount on insurance purchase in India

for rainfall insurance and found a significant price sensitivity for rainfall insurance product, a 10 percent price decline increases the probability of take up by 10.4- 11.6 percent, thus indicating a price elasticity of 1.04-1.16.

H_0 : Price is a not key determinant that affects farmer participation in agriculture micro insurance.

Decision rule: Reject H_0 : if $|p\text{-value}| < 000.00$ (from t-distribution statistical tables)

Government schemes

H_1 : Government schemes have significance on farmer participation in agriculture micro insurance.

The coefficient of government schemes is 0.652, this implies that $\exp(\beta) = \exp(0.652) \approx (1.919)$. Therefore, a unit increase in government schemes, *ceteris paribus*, leads to an increase in the odds of increase in farmer participation in agriculture micro insurance. Thus, a high value of government schemes is associated with an increase in farmer participation in agriculture micro insurance. This result is in line with Akpan et al., (2015) who explains that, an increase in participation is seen when government subsidies and incentives towards micro insurance services.

H_0 : Government schemes do not have significance on farmer participation in agriculture micro insurance.

Decision rule: Reject H_0 : if $|p\text{-value}| < 000.00$ (from t-distribution statistical tables)

Wealth and Income / No Adequate Resources

H_1 : wealth and income affects farmer participation in agriculture micro insurance.

The coefficient of government schemes is 0.851 this implies that $\exp(\beta) = \exp(0.851) \approx (2.342)$. Therefore, a unit increase in wealth and income, *ceteris paribus*, leads to an increase in the odds of increase in farmer participation in agriculture micro insurance. Thus, a high value of wealth and

income is associated with an increase in farmer participation in agriculture micro insurance .Clarke (2011) affirms the results, the study explains that they is appositive relationship between wealth and income and farmer participation, wealthier households have a higher chance of accessing credit and purchasing of micro insurance becomes feasible. Gollier (2013), agrees also as he alluded that take up for micro insurance increases when the less wealthy household are given enough money to buy at least one policy.

H_0 : wealth and income do not affect farmer participation in agriculture micro insurance.

Decision rule: Reject **H_0** : if $|p\text{-value}| < 0.000.00$ (from t-distribution statistical tables)

Education and awareness

Alpha level 5%, therefore p value < 0.05 {statistically significant}, p value > 0.05 (statistically not significant).

H_1 : Education and awareness is does have significance on farmer participation in agriculture micro insurance.

The Beta coefficient of education and awareness on agriculture micro insurance is 1.047, producing $\exp(\beta) = \exp(1.047) \approx (2.849)$. The result is the factor by which the odds change when education and awareness increases by one unit. Therefore, a unit increase in education and awareness, *ceteris paribus*, results in an increase in the odds of increase in farmer participation in agriculture micro insurance. As such, a high value for education and awareness is associated with an increase in farmer participation in agriculture micro insurance. Other studies conducted by Cole et al. (2012) share the same view as they show that education on insurance products is one of the major factors that determine purchasing decision by farmers.

H_0 : Education and awareness is does not have any significance on farmer participation in micro insurance.

Decision rule: Reject H_0 : if $|p\text{-value}| < 0.0001$ (from t-distribution statistical tables)

Lack of trust

Alpha level 5%, therefore p value < 0.05 {statistically significant}, p value > 0.05 (statistically not significant).

H_1 : Trust is one of the major factors that affects farmer participation in agriculture micro insurance.

The coefficient of lack of trust is -0.869, this implies that $\exp(\beta) = \exp(-0.869) \approx (0.419)$. Therefore, a unit increase in lack of trust, *ceteris paribus*, leads to a decrease in the odds of increase in farmer participation in agriculture micro insurance. Thus, a high value of lack of trust is associated with a decrease in farmer participation in agriculture micro insurance. This result is in line with Gine et al. (2008) who said, trust in the insurance provider is a key determinant for insurance uptake.

H_0 : Trust is not one of the major factors that affects farmer participation in agriculture micro insurance.

Decision rule: Reject H_0 : if $|p\text{-value}| < 0.0005$ (from t-distribution statistical tables)

Product Design/ Product cover not adequate

H_1 : Product design affect farmers purchasing decision in agriculture micro insurance.

The coefficient of product coverage inadequacy is -0.664, this implies that $\exp(\beta) = \exp(-0.664) \approx (0.515)$. Therefore, a unit increase in Product coverage inadequacy, *ceteris paribus*, leads to a decrease in the odds of increase in farmer participation in agriculture micro insurance. Thus, a high value of Product coverage inadequacy is associated with a decrease in farmer participation in

agriculture micro insurance. This same view was later shared by Churchill (2002), who looked at the importance of appropriate product design and noted that we have to be aware of the risks that the low income households face, how often and the resulting losses so as to provide adequate cover for them.

H_0 : Product design does not affect farmers purchasing decision in agriculture micro insurance

Decision rule: Reject **H_0** : if $|p\text{-value}| < 0.0003$ (from t-distribution statistical tables)

It has been noted that age, gender, price, education and awareness, lack of trusts and product design are important at predicting farmers' participation in agriculture micro insurance.

Insignificant variables

Reflecting back on the backward regression model it starts with all candidate variables testing deletion of each, it deletes the variable in each stage so it deletes the variable whose loss gives the most statistically insignificant deterioration of the model fit. The tables below shows the variables that were deleted in each step. Alpha level 5%, therefore $p\text{ value} < 0.05$ {statistically significant}, $p\text{ value} > 0.05$ (statistically not significant). We do not explain the insignificant values as they do not have an effect on our y variable. Therefore the researcher will state them and deny the H_1 . Step 3 and step 6 were control variables that were deleted that is gender and age respectively.

Distribution Channel.

H_0 : Distribution channel is one of the key factors that does not influence farmers' participation in agriculture micro insurance.

Step 2	Sig
Product accessibility	0.423

From the following table data presented, distribution channel is not a useful subset and it does not influence in the purchasing decision of a farmer. This same view is shared by Njuguna and Arunga (2013) state that one of the risks that providers think are immanent in micro insurance is inadequacy of distribution channel, but what are influences the purchase is farmers knowledge not its accessibility.

H_1 : Distribution channel is one of the key factors that influence farmers' participation in agriculture micro insurance.

Decision rule: Reject H_1 : if $|p\text{-value}| > 0.423$ (from t-distribution statistical tables)

Religion

H_0 : Religion does not affect farmer participation in agriculture micro insurance.

Step 3	Sig
Religious restrictions	0.385

Results from the table show that religious restrictions do not influence farmer participation in micro insurance products. The notion is supported by Cole et al. (2012) adds that those with what they regard as strong faith individuals/group of people tend to rely solely on God mostly results in more risk taking therefore.

H_1 Religion does affect farmer participation in agriculture micro insurance.

Decision rule: Reject H_1 : if $|p\text{-value}| > 0.385$ (from t-distribution statistical tables)

Basis risk

H_0 : Basis risk does not affect famer participation in agriculture micro insurance.

Step 4	Sig
Fear of being denied full indemnification	0.252

The results show that basis risk was eliminated in step 4 as it has a significant level which was higher than 0.05. According to the analysis this implies that basis risk is not important in the purchasing decision of farmers. Decon et al. (2011) agrees with the results as he mentioned that most farmers will not be aware of this type of risks at the inception of the policy it will only be discovered when the pay-outs by the insurance company are not perfectly correlated with the losses.

H_1 : Basis risk affect farmer participation in agriculture micro insurance

Decision rule: Reject H_1 : if $|p\text{-value}| > 0.252$ (from t-distribution statistical tables)

Peer Influence

H_0 : Peer influence does not affect farmer participation in agriculture micro insurance.

Step 6	Sig
Influence from peers	0.120

The analysis clarify the H_0 hypothesis that peer influence does not affect the individual/group purchasing decision of agriculture insurance products. The study done by Dercon et al. (2012) agree with the researchers' findings that peer referrals for micro insurance participation is insignificant on insurance demands.

H_1 : Peer influence does affect farmer participation in purchasing agriculture micro insurance.

Decision rule: Reject H_1 : if $|p\text{-value}| > 0.120$ (from t-distribution statistical tables)

The following results implies that distribution channel, religion, gender, peer influence and age were not important in predicting farmers' participation in agriculture micro insurance products.

4.5 Qualitative Results

4.5.1 Agriculture micro insurance in Zimbabwe (Insures Response)

The respondents were asked to comment on the insurance products that they offer, factors that they consider in charging premium for these products, and the marketing activities for these products. Interviewee 1 who is an underwriter manager they provide what is called 'Drought Insurance product' it has a local names in Shona called *Ruzhowa* and Ndebele name called *Incigo* it is a weather index cover. Interviewee 2 did not have much to say as their product is self-explanatory *Ecofarmer* the difference with other providers is that they are providing the product with mobile technology.

Interview 1 said premiums are charged using firstly the satellite data from about 12 to 15 years ex ante and the type of agricultural activity but at the moment its affixed to crop insurance they also look at the hectare, previous claims history. The premiums vary from one location to another. In terms of adequacy the cover said to be good but subject to basis risk. Interviewee 2 said they provide an index based micro insurance were a farmer covers a small amounts of land for example half acre with a micro premium of \$2.50. The use of mobile technology to pay farmers via mobile money, locate and also register a farmer. They is no strict underwriting per say.

In terms of education and awareness Interview 1 said that they use direct selling to a group of farmers and use of social media and newspapers. He further alluded that the level of appreciation in the market is still low for this product as it is still in its early stages despite the efforts. In terms of the distribution channel they have started engaging few brokers notably such as Minerva risk advisory for their product and also they sales agents deployed. Interviewee 2 commented by saying the use of mobile technology has combined both of the advertisement method and a way of distributing their product. The manager also said that the uptake is not yet significant but are hoping for a rise.

According to Kakwere (2016) who presented the new Zimbabwe framework, she alluded that in first stages in providing this product providers are going to face low uptake of the product as they market is will not be very aware, therefore this is in line with the researchers finding in the market.

4.5.2 Involvement and government participation in Zimbabwe

The respondents who are the operational managers of insurance companies were asked to comment on how the government is participating in terms of influencing micro insurance take up and if not how does lack of participation affect them in terms in farmer participation. Interviewee 2 explained that the agriculture micro insurance services are new they have not been any noted or known government intervention by way subsidies to farmers their fore due to the low farmer income it results in low agriculture production and their fore the decision to purchase insurance is removed. Interviewee 1 had a contradicting point of view as he suggested that the government encouraging efficient networking between farmers so as to increase collaboration of farmers between different regions. Its offering subsidies to only registered farmers , unfortunately most small holder farmers are not registered and do not have the little benefits that the government offer, they is limited participation in the government not entirely no participation. He also said the government of Zimbabwe is playing a good regulatory role in making sure that they are no emergence of fraudulent agents and deceptive clients who are there to milk the newly formed sector. According to IPEC REPORT 2017 as the regulator of the insurance companies with the help of the government they are playing very important role in making sure that the participants in the environment are complying with the regulatory statues.

4.5.3 Recommendations for farmer participation in agriculture Micro insurance

The question on recommendations that could help improve agriculture micro insurance Interviewee 2 responded that for these products to fully benefit the farmers the farmers themselves should not wait on sales agents if they have heard of this product they should group themselves into small groups and approach a contract farming expect in for example crop production so as to be lectured on the best method of mitigating their risks. Interviewee 1 recommend that for farmers to participate in these products heavy awareness campaigns and educational information

dissemination should be done so as to enlighten these small holders on the benefits of such a product in increasing not only their revenue but in also contributing to the GDP of the country. The overall response showed that insurance providers had a lot of awareness and educational campaigns that they have to do to enlighten the small holder farmers throughout the country. As alluded by Siegel, et al. (2001) that some insurance firms provide information and conduct education campaigns among low income households, educating them on the importance of risk protection using micro insurance schemes and also explaining the difference between conventional and micro insurance products

4.5.4 IPEC Involvement and government participation in Zimbabwe

A representative from IPEC was asked on the strategies that they are employing to promote farmer participation in agriculture insurance does your involvement enough promote micro insurance uptake. The respondent from the regulator was that the mostly they provide financial protection for farmers. The government mobilises resources for relief spending by securing financial resources for those affected famers. Ways that they use to promote participation are subsidising insurance premiums so as to promote take through improving affordability. Another strategy is to incentivising insurance companies to enter the unserved low income market. We also launch public awareness campaigns educating the population on the benefits of insurance and try to create an enabling environment regulatory environment that promotes agriculture micro insurance or the traditional insurance. The respondent alluded that they feel that their involvement not enough, more involvement in tem of financing is required, but it will try by all means possible that the few resources that are there are available to all registered farmers small or large.

4.6. Summary

This chapter was addressing the results obtained from the analysis of the research. All the mentioned objectives of the research were answered as well and all the obtained results. The next chapter is a presentation of the summary to the study, conclusion and recommendations.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter covers the presentation of a summary of the findings, conclusion and recommendations arising from this study. The study opted to determine examine the factors that affect farmer's participation in micro insurance with specific reference to the Zimbabwe agriculture sector.

5.1 Findings from the study

The study was intended to determine the factors that affect farmers' participation in agriculture micro insurance in Zimbabwe, 12 factors chosen by the researcher after a vigorous review of 41 studies in micro insurance which are price, wealth and income, education and awareness, basis risk, trust, peer influence, religion, product design, age, distribution channel, government schemes and gender were thoroughly examined to determine if these were the major factors. It was promoted by the low uptake of agriculture insurance products after efforts made by many companies to provide the newly launched agriculture micro insurance products, therefore the study explored the various factors that determine farmers participation in agriculture micro insurance.

The researcher found out that they are 61.0% of farmers majoring in crop production followed by 23.4% farmers who are into livestock husbandry and 15.9 % majoring in both the farming activities. The highest risk faced is theft with 29.3% on the farmers output relative to risks such as flooding, drought and veld fires. The effects of these risk have been found to be moderate with 28.8% effect on the farmers output. Under the targeted population 74% had no micro insurance cover/policies in place and 26% had agriculture micro insurance cover.

The researcher found out 6 major factors that are significant in farmer's participation. From the study price, product design and trust have negative correlation with farmers' participation in agriculture micro insurance and also that education and awareness, gender and government

schemes have a positive correlation with farmer's participation. Using the logistics regression model they is 86.8% probability that a farmer will participate in agriculture micro insurance products without considering any explanatory variables.

The results reveal that they are very few participating player in agriculture micro insurance, notably they are 2 entities actively participating that is Ecosure (Sub Group of Econet) and Oldmutual insurance (member of the Old mutual group).The results further show that they is lack of government involvement to influence farmer participation in the purchase of agriculture micro insurance products and the newly introduced framework on micro insurance has shown positive impact in the purchasing decision of agriculture micro insurance. The results also show that pricing of products is not clear by the providers. Also their risks that they cover are weather related risks. Regulation entity such as (IPEC) influence provider participation in agriculture micro insurance as they are working as a watch dog, supervising the newly emerged micro insurance products by insurance companies.

5.2 Conclusion

5.2.1 To define micro insurance and its potential benefits

The study concludes that micro insurance is financial tool that helps low income earners to mitigate their risks and to plan for the future. It has been established that third world countries suffer with poverty because they do not have viable mitigating tools for physical and financial risk they face in the agriculture production. The benefits of micro insurance are protection against negative shocks on assets, spreading of risks and acts as a risk management tool. The benefits also to insurance providers are diversification, a laboratory for innovation, market intelligence and as well it advantage on their reputation in the sector. The reason why most of the farmers were suffering losses was due to lack of insurance cover that could protect them from these risks. Micro insurance has been found to be the best method of mitigating losses faced by poor households that are majoring in animal and crop production.

5.2.3 To determine the relationship between (Price, wealth and income, education and awareness, basis risk, trust, peer influence, religion, product design, age, distribution channel, government schemes and gender) and farmer participation in agriculture micro insurance

The study concludes that **price** has a negative correlation with farmer participation, it implies that an increase in price will result in a decrease in farmer participation. **Trust** and **product design** has a great impact at reducing the rate of farmers participation hence it has a negative correlation, and the vice versa is true. It is clear that price and trust are very significant factors that influence participation in an inverse way .Therefore price and trust are found to very sensitive to farmer participation levels, price is an indicator of the product as well as trust is an indicator for confidence.

The study also concludes that the following factors; **wealth and income, government schemes, and education and awareness** have a positive correlation with farmers' participation. This implies that an increase in any of the 4 factors result in higher demand/participation in micro agriculture products by farmers. Therefore the researcher asserts that they are only 6 factors that can either positively or negatively affect farmers purchasing decision out of 12 discussed factors.

The study concludes that **gender, basis risk, peer influence, religion, age and distribution channel** have no relationship with farmer participation. These factors according to the backward stepwise regression they were found to be insignificant in determining farmer participation which was the dependent variable. They could not be fitted on the logistics regression model due to their insignificance.

Final conclusion is that the model used proved to be viable and in line with the previous studies in regards to measuring the determinants of farmer participation which is consistency with the empirical studies since they indicate both the negative and positive relations between dependent and independent variables.

5.3 Policy implications

The study on the determination of farmer participation in agriculture micro insurance in Zimbabwe provided the base on which policy makers may draw from in their future policy decisions. It has been established that small scale farmers prepared to engage in agriculture micro insurance for the security of their products and to reduce losses by factors beyond their control. However, they are hindered to do so because of issues like price of the products and the lack of trust they have on the agriculture micro insurance providers. Therefore, future policies should create an environment in which agriculture micro insurance is provided at affordable prices. They should also focus on the creation of an environment which fosters trust and honesty in the dealings of agriculture micro insurance providers and farmers to encourage the uptake of the agriculture micro insurance products.

5.4 Recommendations

Recommendations were provided to the government of Zimbabwe, Micro Insurance companies and Farmers.

1. Government of Zimbabwe

According to the findings the researcher recommend that the government of Zimbabwe should support farmers that are in agriculture business by providing heavy initial subsidise and incentivise to insurance companies through **government schemes**. This is meant to reduce their production costs and boost their participation to purchase agriculture insurance or micro insurance. According to Akpan et al. (2010) the government can support farmers by providing easy access to loan, agriculture inputs and infrastructure to motivate uptake. The researcher also recommend that government enact legislation and effectively regulate players in the insurance sector to promote fair practises against the providers and the farmers. Rendering to Kakwere (2016) the government plays very important role also in enabling and promoting a legal and regulatory framework

2. To the Micro Insurance companies

According to the findings of the researcher recommends the following to insurance companies. They should take note of the following factors in their provision of agriculture micro insurance service;

Price of the product

Insurance companies should not downsize traditional insurance products so as to fit their prices into micro insurance needs. The new product should be priced appropriately taking into account prices that are determined by actuaries which would be fair and commensurate to the risks and also taking into consideration the provider's expense. According to Bauchet (2013) product pricing is the key factor to micro insurance development. Most micro insurance companies face difficulties in pricing the product. The researcher also recommends that the insurance companies should be efficient in data collection.

Education and Awareness

Educating the vast population through massive marketing can be a way that insurance providers can use to improve their gross premiums under agriculture micro insurance products. Farmers education and awareness of the product is very important, educating customers on the benefits of micro insurance is the only way a company can see results (German institute of Economic Research, 2009). By conducting educational campaigns among low income households educating them on the difference between conventional insurance and traditional insurance can change customer's perceptions' and beliefs about insurance. In India companies such Agriculture Insurance Company of INDIA Lombard (AICI) do massive promotions and campaigning programs on their micro insurance products notably rainfall insurance all over the country to enhance uptake.

Trust

Providers should install trust and confidence to customers by firstly removing the opportunistic behaviour of insurers. Insurance is built on trust any negative experiences by a farmer or peers can affect the level of trust (Dercon et al. 2012). Clients fear to be cheated after they have paid their premiums to insurance companies, by removing the opportunistic behaviour trust can be rebuilt to customers so that they can be able to purchase micro insurance with confidence. According to Tellez (2012), insurance companies can increase trust by use of mobile network providers, this in turn increase the number of volumes and also serves as a less cost distribution channel. In addition most individuals trust NGOs by use of them they can enhance trust to the farmers.

Product Design

Providers should design a micro insurance product specifically targeted for low income earners that should be simple, clear and with minimum exclusions. Churchill (2002) alluded that an appropriate product design should be aware of the risks faced by low income earners, how often do they face the risks and the resulting losses. The simpler the better the product as it enhances better product understanding. The researcher recommends that the products also include risks such as theft that are not included as it is one of the major risks that is being faced by the farmers. In Kenya for agriculture micro insurance theft is an extension for a little additional premium for farmers who face such a risk and it should also be included.

3. To the Farmers

The study recommends that farmers should take up micro insurance to mitigate the risks of loss that they are faced with in their agriculture production According to Roth (2010) each season 1 out of 3 farmers suffer heavy production losses due to weather related effects. Agriculture micro insurance is effective ways of managing negative shocks on the little assets that low income farmers have. They also recommended to be innovative in their agriculture activities to ensure a better output which in turn can pave way for insurance take-up.

5.5 Suggestions for Further Research

The study focussed on the determination of farmer participation in agriculture micro insurance in Zimbabwe with specific reference to peri urban area in Harare. It could be widened to consider other peri urban areas and farmers in large farms including A1 and A2 farmers in Zimbabwe. Future studies may also consider panel data by which a comparison of farmers in peri urban Harare is compared to other peri urban farmers in other capital cities similar to Harare.

REFERENCE LIST

Ackah, C. & Owusu, A. (2012) Assesing knowledge of and attitude towards insurance in Ghana. Research conference on Microinsurance, Twenty; Ghana

Ahmed, M., (2007) Health micro insurance: a comparative study of three examples in Bangladesh. Washington, DC: CGAP Working Group on Micro insurance, World Bank.

AKPAN, N. A. et al.. (2005) Reducing vulnerability to the poor. 8th Ed. London: Pearson.

Anonymous (2017) Assessing Opportunities for agriculture insurance and risks coping strategies in Dohn Thap. Thai Binh and Vinh Phuc Provinces: Vietman, Microfinance Opportunities.

Arun, T., Bendig, M., and Arun, S. (2012) Bequest motives and determinants of micro life insurance. Sri Lanka: World Development .

Babbie, E. (2011) The basics of social research. [online] USA :Wadsworth, Cengage Learning. Available at: <http://www.thenasicsofsocialreserach.com> [Accessed: 29th of September 2017]

Barett, C.B. and McPeak, J.G. (2006) Poverty Traps and Safety Nets. Poverty, inequality and development. USA: Eathscan.

Barlett, R. Kortlik, A. and Higgins, T. (2011) Organizational Research Information technology ,Learning and Performance. Journal 19 (1) .p. 34-55

Barnett, B.J., Barrett, C.B. and Skees, J.R. (2008) Poverty Traps and Index-Based Risk Transfer Products. London: World Development.

Bauchet, J. (2013) Price and information type in life microinsurance demand: Experimental evidence from Mexico. New York University: New York.

Butler, S. & Francis, P., 2010. Cutting the cost of insurance claims: taking. [Online] Available at: <http://www.booz.com> [Accessed: 15th of September 2017]

CGAP., (2003) Preliminary Donor Guidelines for Supporting Microinsurance. Draft Donor Guidelines : Consultative Group for Assistance of the Poor Working Group on Microinsurance.

Chen, K., Hu, W., Xiao, C., and Xing, L. (2013) Smallholder participation in hog insurance and willingness to pay for improved policies: Evidence from Sichuan province in China. ILO Micro insurance Innovation Facility Research Paper No. 28, Geneva: International Labour Organization.

Chen, R., and Ravillion, K. (2010) Age, period, and cohort effects on life insurance purchases in the US. Journal of Risk and Insurance .Library review [Online] Emerald Database (68) .p.303–327. <http://www.emeraldinsight.com> . [Accessed:30th September 2017].

Churchill, C. (2006) What is insurance for the poor? In: Churchill, C. Protecting the Poor, ILO: Geneva.

Churchill, C., and McCord , M,. (2012) Current trends in micro insurance. In Churchill C, Matul M (eds), Protecting the Poor – A Microinsurance Compendium II. International Labor Organization: Geneva.

Clarke, D., and G. Kalani. (2011) Microinsurance Decisions: Evidence from Ethiopia. Mimeo, University of Oxford, UK.

Cole, S., Giné, X., Tobacman, J., Topalova, P. B., Townsend, R. M., and Vickery, J. I. (2013) Barriers to household risk management: evidence from India. American Economic Journal: Applied Economics 8 (1) .p.104–135.

Cole, S., Sampson, T., and Zia, B. (2011) Prices or knowledge? What drives demand for financial services in emerging markets? Journal of Finance 66(6).p.1933–1967.

Cole, S.A., Gine, X., Tobacman, J., Topalova, P., Townsend, R. and Vickery, J. (2009) Barriers to Household Risk Management: Evidence from India Harvard Business School Working Paper.

Croos,.E (2017) Agriculture key to Zim Economy.vZimbabwe Independent, 27 may 2017 [Online].Available at: <https://www.theindependent.co.zw/2016/sprintpcs.com> (Acessed:02 August 2017)

Dalal, A. and Morduch, J. (2010) The Psychology of Microinsurance, Small Changes can make a surprising difference. International Labour Office. Geneva

Dercon, S., Gunning, J. W., and Zeitlin, A. (2011) The demand for insurance under limited credibility: Evidence from Kenya. Paper presented at International Development Conference, DIAL: Paris.

Dohetry ,N.A and Schelsinger, A (1990) Rational insurance purchasing :consideration of contract performance. The quality Journal economics 105(3).p.243-253

Eling, M., Pradhan D. and Schmit, B (2013) Corporate governance and risk taking: Evidence from the U.K. and German insurance markets; Journal of Risk and Finance advance online publication 10 August 2017; DOI: 10.1111/j.1539-6975.2012.01510.x.

Finscope Report (2014) Available at <https://www.finmark.org.za/finscope-zimbabwe-consumer-survey-2014>.

Gaurav, S., Cole, S., and Tobacman, J. (2011) Marketing complex financial products in emerging markets: Evidence from rainfall insurance in India: Journal of Marketing Research 48 .p. 150–162.

Gheysens, J., and Gunther, I. (2012) Risk experiments in gains and losses: A case study for Benin: working paper no. 2012/38, UNU-WIDER, Helsinki.

Giesbert, L., Stenier, S. and Bendig, M. (2011) Participation in micro life insurance and use of other financial services in Ghana. The Journal of Risk and Insurance Vol 78 (1) .p.7-35

Gine, X., Townsend, R. and Vickery, J. (2008) Patterns of rainfall insurance participation in rural India. World Bank Economic Review vol. 22 (3).p. 593-566

Gollier, C. (2013) 'To insure or not to insure? An insurance puzzle: Geneva Papers on Risk and Insurance Theory 28(1).p. 5–24.

IFAD. (2011) Rural Poverty report 2011 Rome: International Fund for Agricultural Development.

ILO (2011) Diagnostic Report on the Social Security Situation in Sri Lanka. Colombo.

Insurance and Pensions Commission (IPEC), 2016. 2nd Quarter Short Term (non-life) Insurance Report, HARARE: IPEC. Volume 3, p. 22.

International Association of Insurance Supervisors IAIS (2007). Issues in regulation and supervision of microinsurance. Basel. [Online] Available at: <http://www.iais.com> [Accessed 13th September 2017].

Juttiing, J. (2003) Health insurance for the poor? Determinants of participation in community based health insurance schemes in rural Senegal Journal 19 (1) .p. 34-55

Kakwere, J. (2016) Microinsurance regulatory framework Zimbabwe workshop. Crown Plaza.

Kamau, G. M. (2013) Factors Contributing to Low Insurance Penetration in Kenya. International Journal of Social Sciences and Entrepreneurship: 1(2) .p. 463-469

Karlan, D., R. D. Osei, I. Osei-Akoto and C. Udry (2012) Agriculture decision after relaxing credit risk constraints, micro insurance facility. International Labour office: Geneva.

Leedy, P.D., & Ormrod, J.E. (2010) Practical research, Planning and design. 9th Edition. Upper Saddle River, NJ: Prentice hall.

Liu, Y., and Myers, R. J. (2012) The dynamics of insurance demand under liquidity constraints and insurer default risk. IFPRI Discussion Paper 01174:Washington, DC.

Lloyd's (2009) Insurance in developing countries: Exploring opportunities in microinsurance. 360° Risk Insight Report:London.

Mahul,J.and Stutley ,C.,J.2010.Governemnt support to Agriculature insurance. Challenges and options for Developing Countries,World Bank

Mahul,O. and C.Stuntley 2010;Governemnt support to agriculture insurance.Challenges and options for developing countries ,Washington,DC;The World bank

Makudze, S. M. (2012). African Policy Approaches: Microinsurance in Kenya. AIO – A2ii Regulators' Workshop, Victoria Falls, Zimbabwe May 26, 2011.

Manning, W.G. and Marquis M.S. (1996) Health Insurance: The Tradeoff between Risk Pooling and Moral Hazard. Journal of Health Economics 15 (5).p. 609–640.

McCord, M. (2001) Microinsurance: A case study of an example of the provider model of microinsurance provision: GRET, Cambodia (Nairobi, MicroSave).

Mobarak, A. M., and Rosenzweig, M. (2012) Selling formal insurance to the informally insured', discussion paper. Yale Department of Economics: New Haven.

Morduch, J. (1999) Between the state and the market: Can informal insurance patch the safety net? World Bank Research Observe [Online] Emerald Database 44 14(2) .p.187–207. Available from: <http://www.emeraldinsight.com> [Accessed: 30th August 2017].

Morsink, K.,Geurts,P .(2011) Informal trust building factors and demand for micro insurance. annual international microinsurance conference :Rio deJaneroo

Munich Re. (2005) Agriculture microinsurance Markets: Sound Development: Greenfield for Agricultural Insurance. Sigma.

Neuman, W.L., (2000) Social research methods: Qualitative and quantitative approaches. 4th edition. [Online] Sterling.VA Kogan page. Available from: <http://www.netlibrary.com>[Accessed: 6th October 2017].

Ngechu , M. (2004) Understanding the research process and methods: An introduction of research methods. Nairobi: Acts Press.

Ngoima, W.R. (2013) The Effects of Insurance Agents in Insurance Penetration in Kenya. Unpublished MBA project: University of Nairobi.

Nguyen, H., and Knowles, J. (2010) Demand for voluntary health insurance in developing countries: The case of Vietnam's school-age children and adolescent student health insurance program. *Social Science and Medicine* 71(12) .p.2074–2082.

Njuguna, A. G. (2012) A Survey of Micro-Insurance Service Providers in Kenya. [Online] Available at: <http://www.miconsuranceinkenya.com> [Accessed 15th September 2017].

Njuguna, A.G., and Arunga, A. (2013) Risk Management Practices: A Survey of Micro-Insurance Service Providers in Kenya. *International Journal of Financial Research.* Available from: www.sciedu.ca/ijfr. Retrieved on 18th October 2017

Outreville, J. F. (2013) The relationship between insurance and economic development: 85 empirical papers for a review of the literature. *Risk Management and Insurance Review* 16(1).p. 71–122.

Patt, A., Peterson, N., Carter, M., Velez, M., Hess, U., and Suarez, P. (2009) Making index insurance attractive to farmers. *Mitigation and Adaptation Strategies for Global Change* 14(8) .p.737–753.

Risk & Insure Zimbabwe [Online] Risk Management Practices. Available at: <http://ri.co.zw/2017/08/24/funeral-cash-plans-dominate-new-micro-insurance-products/> [Accessed on 28th September 2017]

Roth .J and J.McCord (2008) Agriculture microinsurance –Global practises and prospects .Appleton, WI USA; The micro insurance centre.

Roth, J., McCord, M., & Liber, D. (2006) Insurance provision in the world's 100 poorest countries. Appleton, WI USA: Micro insurance Centre.

Rubin, A. & Babbie, E. (2010), Essential research methods for social work. New york: Brooks/Cole Cengage Learning. [Accessed: 10th of August 2017]

S. Cole, X. Gine, J. Tobacman, P. Topalova, R. Townsend, and J.Vickery (2013) Barriers to Household Risk Management: Evidence from India. *American Economic Journal: Applied Economics.*

Saunders, M., Thornhill, M. and Lewis, P. (2007) Research Methods for Business Students.Harlow: Prentice Hall. [Accessed: 10th of August 2017]

Saunders. M, Lewis. P,Thornhill. A, (2009) Research methods for business studies. 5th edition .Pearson Education limited.

Saunders. M, Lewis. P,Thornhill. A, (2009) Research methods for business studies, Pearson Education limited 5th Edition. Blumberg, B. Cooper, D. R. Schindler, P.S, Business Research methods. International edition 3rd Edition. [Accessed: 25th of February 2017]

Scott, D .& Morrison, M. (2007) Key ideas in educational research. United Kingdom: Continuum.

Sekeran, U. and Boagie, U. (2009) Research method for business: A skill building approach, 5th edition, West Sussex: John Wiley and Sons Ltd. Sri Lanka: Institute of Policy Studies.

Swiss re (2010) betting risks in the farm? [Online] Agriculture risks in Brazil. Available from: <http://www.swissre/betting/risks/in/the/farm.com> (Accessed on:23rd of August 2017)

Swiss re (2015) world insurance in 2014 ; [Online] emerging markets leading the way. Available from: <http://www.swissre/world/insurance/in/2014.com> (Accessed on:29th of August 2017)

Swiss Re. (2007). Insurance in Emerging Markets: Sound Development; Greenfield for Agricultural Insurance: Sigma.

Tadesse, M., and Brans, M. V. (2012) Risk, coping mechanisms, and factors in the demand for micro-insurance in Ethiopia; Journal of Economics and International Finance 4(4).p. 79–91.

Tellez,C (2012) Emerging Practises in Mobile Micro insurance. Geneva: International Labour Organisations

The Herald, (2016) Available on <http://www.theheraldco.zw> [Accessed: 30th of August 2017]

The Independent (2017) Available on <http://www.theindependent.co.zw> [Accessed: 30th of August 2017]

Thornton, R. L., Hatt, L. E., Field, E. M., Islam, M., Sol´ Diaz, F., and Gonzalez, M. A. (2010) Social security health insurance for the informal sector in Nicaragua: A randomized evaluation: Health Economics 19(1) .p. 181–206.

Zhang Leng Z., (2016) Use of statistical models by statistical packages .Department Critical care medicine. China : Jinlva University.

Zhang, L., Wang, H., Wang, L., and Hsiao, W. (2006) Social capital and farmer’s willingness-to-join a newly established community-based health insurance in rural China; Health Policy 76(2) .p. 233–242.

Zimbabwe National Statistics Agency (Zimstats) latest release its website www.zimstat.co.zw>statistical database (Accessed on 27th of July 2017)



APPENDIX A: Letter of request

Date .../.../2017

To whom it may concern:

Dear Sir/Madam

Ref: Request for information for academic research purposes

My name is Loice Chatizah, a student at Midlands State University pursuing Bachelors of Commerce Honors degree in Insurance and Risk Management. As part of the requirements in the study I am carrying out a study examining determinants of farmer participation in agriculture micro insurance in Zimbabwe. The research project seeks to investigate;

“Determinants of farmer participation in agriculture micro insurance in Zimbabwe”.

You have been selected as one of the respondents for the study. Kindly complete the questionnaire affixed. Assurance is hereby granted to you that all information solicited will be treated with confidentiality and will only be used for academic purposes.

Your assistance will be greatly appreciated.

Yours faithfully

Chatizah Loice

Contacts +263778501485

Email: [loice.chatizah@gmail](mailto:loice.chatizah@gmail.com)

APPENDIX B: FARMER'S QUESTIONNAIRE

INSTRUCTIONS

1. Do not write your name.
2. Answer all questions.
3. Tick in the appropriate box.
4. Where spaces are provided, fill in your responses in the spaces.

1. What is your gender?

Male female

2. . Please indicate your age

30 below 30 to 39 40 to 49 50 above

3. What is the highest level of education?

Secondary Certificates Diploma Undegarduate degree
Higher degree

4. Which farm activity do you major in?

Crop Livestock Both

5. Which farming risks do you face at your farm?

Flooding hailstorm Drought theft

Specify other risks if any

6. What are the effects of these risk/s you face at your farm?

Livestock death crop failure

Specify other effects if any

7. Do you have any form of micro insurance?

Yes No

8. From the following table please indicate factors that you may think affect farmers in the decision to purchase agriculture micro insurance?

Factors	Yes	No
Price of the product		
Education and awareness		
Age		
Lack of trust		
Gender issues		
Few resources		
Poor product design		
Religion does not allow		

Specify other reasons if any

9. Is the government helping you in terms or reducing production costs?

Yes No

10. Have you ever suffered a loss during the period of your insurance?

Yes No

11. If yes, to what extend were you compensated or covered after a claim?

No extent { } Less extent { } Moderate extent{ } Large extent { } Very large extent { }

12. Do you have fellow farmers who encountered losses in crop production or animal husbandry?

Yes No

13. What were their comments regarding their compensation?

Excellent Better Good Poor

THE END

APPENDIX C: INSURER'S INTERVIEW GUIDE

1. What are the agricultural insurance products you offer to farmers at your organisation?
2. What factors do you consider in charging premiums for these products? Is the cover adequate?
3. How do you market your products?
4. What are the major factors that affect farmer's participation in your product that you provide?
5. How is the government encouraging participation in agriculture micro insurance, is it lacking in any way?
6. Can you provide recommendations that help to improve farmer participation agriculture micro insurance?

Recording Responses

Main points raised

Observation of body language and Emotions

End time-----**THANK YOU.**

APPENDIX D: REGULATOR (IPEC) INTERVIEW GUIDE

1. What strategies are you employing in encouraging micro insurance take up in Zimbabwe?
2. Are these strategies enough to adequately influence a farmer to purchase micro insurance?

Recording Responses

Main points raised

Observation of body language and Emotions

End time-----**THANK YOU.**