AGRICULTURAL FINANCING INITIATIVES IN DEVELOPING COUNTRIES: CAN MICROFINANCE FILL THE GAP? THE CASE OF IRINGA RURAL DISTRICT, TANZANIA.

By

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A Dissertation Submitted in Partial Fulfillment of the Requirements for the Master of Economics in Project Planning and Management (MSC.PPM) of Mzumbe University.

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CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled, **"Agricultural financing initiatives in developing countries: Can microfinance fill the gap? The case of Iringa rural district, Tanzania"** in partial fulfilment of the requirements for award of the degree of Masters of Science in Economics of Mzumbe University.

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I, Catherine Munuo, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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DEDICATION

I, dedicate this dissertation to My Lovely Parents Mr. N.K.Munuo and Mrs. Jully Mgonzo. Also I dedicate this work to my lovely siblings Beatrice, Dorice, Jacob and Glory.

LIST OF ABBREVIATION

AGITF	The Agricultural Input Trust Fund
BOT	Bank of Tanzania
CGAP	Consultative Group to Assist the Poor
DANIDA	Danish International Development Assistance
DID	Desjardins International Development
IFAD	International Fund for Agricultural Development
FERT	Formation pour l'Epanouissement et le Renouveau de la Terre
FSAP	Financial Sector Assessment Program
GoT	Government of Tanzania
HYV	High-Yielding Varieties
1BRD	International Bank for Reconstruction and Development
IMF	International Monetary Fund
MFI	Micro Finance Institution
MKUKUTA	Mpango wa Kukuza Uchumi na Kupunguza Umaskini Tanzania
NMB	National Microfinance Bank
NGO	Non-Governmental Organization
NMP	National Microfinance Policy
NSGPR	National strategy for growth and poverty reduction
PRSP	Poverty Reduction Strategy Paper
SACA	Savings and Credit Association
SACCO	Savings and Credit Cooperative Society
SCCULT	Savings and Credit Cooperative Union League of Tanzania Ltd
SIDO	Small Industrial Development Organization
SMEs	Small and Micro Enterprises
VSLAs	Village savings and loans association

ABSTRACT

Developing country, are suffering from financial shortage in almost all economic sectors particularly in agriculture sector. The initiatives done by the government and different donor agency to finance the farmers have not been able to cover the costs associated with agricultural activities to farmers. As the result farmers continue using tradition farming and depend on informal financial institutions to cover up their financial costs (Wenner, 2010).The informal institutions charge very high interests and often do not meet the needs of the farmers. For this case, microfinance is considered as noble substitute for informal credit and therefore regarded as a powerful instrument for poverty alleviation among the farmers who are economically active but financially constrained (Murdoch & Haley, 2002).

This study presents an empirical investigation on this considerable effect of microfinance toward agriculture financial predicament. The general question that guided the study was “Can microfinance fill agriculture financial gap in developing countries" with a particular focus to Iringa rural district in Tanzania. Cross- sectional, primary data from a sample of 188 farmers was analyzed using the binary logistic regression techniques, to see if microfinance can fill agriculture financial gap or not. The study shows that; 17% of the farmers depend on informal institution and those who depend on microfinance are only 9%. The supply of microfinance credit to the farmers is very limited and it’s only 27% of the respondent, who were able to receive the same amount they applied for. Furthermore its only 41% of the whole farmers who managed to finance their agriculture cost. The odds ratio in favour of scale of the farm increases the possibility of covering financial gap as the scale of the farm decreases. Government subsidies have negative impact on possibility of microfinance to fill the financial gap where as microfinance awareness has positive influence on the possibility of microfinance to fill the gap.

This study therefore contributes to the understanding of the current situation regarding agriculture finance and fills the unknown knowledge of microfinance contribution toward agriculture financing gap.

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CHAPTER ONE

1.0 Introduction

1.1 Background to the problem

For the past few decades agricultural financing has been the centerpiece of many rural development programs in developing countries. Donors and Governments have recognized that financial constraints continue to weaken performance in agriculture which directly link to poverty (Allard et al, 2010). Hence starting from 1960, Governments and donor agencies are intervening in the rural markets by promoting lending and quotas on banks, offering loans at lower interest rates to farmers, advocating credit guarantees, and focusing on targeted lending by developed and focused financial institutions. For instance the best documented case has been the Green Revolution in India, which provided subsidized seeds and fertilizer to farmers in order to increase productivity (Nagarajan and Meyer, R. 2005)

The obvious goal of government intervening was to address the issue of low productivity by offering the poor rural farmers with cheap inputs and subsidized credit in order to overcome the market asymmetries that plagued rural agricultural markets. However the final outcome of the government intervention failed to solve financial problems to the farmers. Subsidized interest rates did not allow rural financial institutions (RFIs) to cover costs of running their institutions. As a result, the number of non performing loans increased dramatically (Allard et al, 2010).

The failures led to the donor communities to decrease their lending for agricultural programs across the board. In the 1970s, agricultural lending accounted for over 30% of all World Bank lending, however, by 2000, this figure dropped below 10%. The amount of Official Development Assistance (ODA) provided by the OECD countries for agricultural projects have dropped considerably, as the result the real net aid to agriculture in the 1990s dropped to a mere 35 percent of its level in the 1980s (Allard et al, 2010).

This drove governments and central banks in many developing countries to constantly improve the regulatory and operating environment in the financial sector (Maurer, 2010).

Uganda for example, introduced economic reform in 1987 and the economy responded by changing the development strategy in 1990 (Meyer L.R al (2004). Kenya stated the policy reform in 1986 with the rigorous implementation of the policy reform in 1993. Ethiopia enacted Financial Regulatory Structure in 1996 (Juanah, 2005). Bolivia Law of Banking and Financial Institutions introduced multiple-service banking or "multi-banca in'1993 (Juanah, 2005). And Philippines emphasized on rural finance, to solve financial requirement in rural areas, thus in 1997, 800 rural banks were in operation, out of 800 bank, 51 of them were cooperative rural banks (Gomez et al, 2000). However the desirable outcome was more literal and the financial crisis to farmers in developing countries was still subsisting. Take for example the case of multiple-service banking leasing at ANED in Bolivia, this form of financing represented 7% of ANED's portfolio in 2001, and only 1.5% in 2007 (Lapenu, 2007).

Specifically Tanzania which was originally a centrally planned economy, initiated economic reform measures in 1986. As part of the economic reform program, implementation of the financial sector reforms started in 1991 and aimed to develop a sustainable, efficient and effective financial system (Rubambey, 2005). The government accepted the role of providing regulatory and public support systems. Pan-territorial pricing was abolished, which meant that producer prices varied in different places according to transport and other handling costs and local market conditions. Farmers were no longer confined to a single source for their fertilizers and other essential inputs; they have several channels through which they can obtain them. (Agriculture and livestock policy, 1997)

However, the withdrawal of government and its parastatals from the provision of agricultural services to farmers have not kept pace with the growth of the private sector participation in terms of its ability to effectively take over financial services in agriculture. The sector has been left in somewhat a hostile territory in which farmers see fertilizers and other inputs, but lack of credit facilities blocks their access to these inputs (Agriculture and livestock policy, 1997).

This brought about the formation of agriculture and livestock policy in 1997, and government continue to finance agriculture though it revenue and donor support. Private sector continues to grow and finance the farmer, but the government was the primary supporter (Agriculture and livestock policy, 1997)

In 2001 the National Microfinance Policy was implemented and officially recognized as a tool for poverty eradication. With its increased use and exposure to the country; banks have taken an interest in offering microfinance (Wikipedia, the free encyclopedia). However the farmers did not benefit from microfinance and agricultural sector was underutilized because of unfulfilled capital requirement.

In 2003 a joint IMF/World Bank Mission on Financial Sector Assessment Program (FSAP) carried out an assessment of the country's financial sector. Among other things, the Mission observed that there is a need to enhance accessibility of financial services to the low-income population who form the majority in the country (Rubambey, 2005). The Government of Tanzania used the report from IMF and the World Bank to form "second generation financial sector reforms". Operations of microfinance regulations corresponding to the new regulatory framework was to be implemented within the "second generation" reforms, in which the microfinance regulations were gazetted in March 2005 (**Rubambey**, 2005).

Following the World Bank report, the government also took measures to increase agricultural financial budget up to Tshs 3,347,539 million in 2004/05 equivalent to 4.7**%** of the total government budget. (Financing Agriculture Sector Development in Tanzania [FASDT], 2012) and from 2006 agricultural sector in Tanzania, particular in Iringa rural has been financed through the ASDP framework.

However the provision from the government did not accommodate the needs of the farmers, and agriculture financial gap continue to grow year after year. Farmers in Tanzania are still using the informal financial initiative which is highly cost, inefficient to the farmers and more often does not meet the need of the farmers. Emphasize to curb up the situation was made and the strategy to fill up the financial gap was more targeted on microfinance provision.

1.2 Statement of the problem

Agriculture is an inherently risky economic activity. Is an investment that requires high gestation period and associated with unpredictable weather which creates uncertain environment and uncontrollable element (Hollinger 2004). A large array of uncontrollable elements can affect output production and prices, resulting into highly variable economic returns to farm households. As a result, the farmers are considered as "non-bankable" by mainstream commercial financial institutions (Wenner, 2010).

Also the financial supports provided by the government to finance agriculture in developing countries are very small compared to total requirements. Further, the dynamic and conflicting changes in agriculture finance appear to be operating as the financial requirements of agriculture are increasing (Hollinger, 2004). Specifically, the thorough investigation made in Tanzania found that agriculture financial gap from 2010/2011 to 2012/2013 is 207,706,395135, 463,252,171,321, and 677,355,306,060 Tshs respectively (Financing Agriculture Sector Development in Tanzania, [FASDT]).

Given the income level of developing countries, microfinance has been observed as a noble substitute of filling financial gap in agriculture sector left by the governments (Murdoch & Haley, 2002). So the governments have tried to improve the working condition of microfinance, including building good infrastructures in rural, as investment incentive and allowing free operation of microfinance. This results in the increase of the number of microfinance branches and availability of loan, especially in village. But none of the effort made was tried to manage risk or even better to averse out risk. Winner, (2010) said developing countries farmers, lack access to both modern instruments of risk management such as, agricultural insurance, futures contracts, or guarantee funds and ex post emergency government assistance.

Therefore there still a question as to whether increasing of microfinance branches and availability of loan is sufficient factors for microfinance to play its role of filling agriculture financial gap, despite of risks involved in financing agriculture.

Although different researchers have tried to analyse the contribution of microfinance towards agriculture Murdoch & Haley, (2002) Hossain, (1986) Islam & Tenaw (2009), Irou and Onyeneke (2012) they both fail to explain if this contribution is matching with the farmers requirements, thus if microfinance can be able to fill agriculture financial gap.

Therefore this research analyses the factual contribution of microfinance (including all form of credit cooperatives, NGOs and micro- enterprise lending) at the angle of filling the agriculture financial gap, and to provide an unknown knowledge as to weather microfinance can be a noble substitute of filling agriculture financial gap.

1.3 Objective of the research

1.3.1 General objective

The main objective of the study is to explore if microfinance can fill agriculture financial gap in developing countries, with a specific focus to Iringa rural district in Tanzania.

1.3.2 Specific objectives.

(i) To identify agriculture financial initiative in Iringa rural district.
(ii) To examine how farmers in Iringa Rural district have been financing their agriculture undertaking.
(iii) To examine the accessibility of farmers to microfinance services.
(iv) To examine whether microfinance institutions have been able cover farming costs.
(v) To assess how the provision of microfinance can fill the financial gap to the farmers.

1.4 Research questions

The research was guided by the following questions.

(i) What is the agriculture financial initiated in Iringa rural district?
(ii) How does the farmers in Iringa Rural district financing their agriculture undertaking?
(iii) Do farmers have access to microfinance credit?

(iv) Are the microfinance institutions able to cover farming costs?

(v) How do provisions of microfinance can fill the financial gap to the farmers?

1.5 Significance of the study

The findings of this research will expand the body of knowledge regarding agriculture financing. It provides new insight, and fills the unknown knowledge of microfinance contribution toward agriculture financing gap. With regard to the main question underlying the research, the research will provide an answer whether microfinance can fill existing agriculture financial gap. And therefore prove whether microfinance is a noble substitute of informal financial institution in developing countries. Also the study gives the way forward towards meeting agricultural financial requirements to the farmers.

To the researcher, this research is part of the fulfillment of the academic requirement for the award of master of economics in project planning and management.

1.6 Justification of the study

Agriculture is the main economic sector that employ 70% of developing counties population, therefore poor performance of the sector, is the primary cause of poverty, hunger and malnutrition.

According to FAO (2004), about 20 percent of the total population in developing countries are chronically undernourished because of inadequate government support. With the growing world population, the present figure of 5.7 billion agriculture fund is expected to rise to 8.3 billion by the year 2025.

That being the case developing governments has increased its effort in financing agriculture to ensure food security and to eliminate poverty. However the effort reached is not enough to cover costs, hence it leaves the gap which geared microfinance to intervene in order control the situation.

Thus why, this study consider analyzing the operation effect of microfinance, as an instrument for reducing rural poverty, which enhances the diversification of economic activities, and improve agriculture practices in rural areas. Also it examine whether microfinance can solely be dependable to fill up the financial gap.

And the fact that, Tanzania is one of the poorest countries in the world it will be a good presenter of other developing countries.

1.7 Organization of the study

This research was organized into five chapters and each chapter constitutes a building block to the next one. Chapter one entails the introduction of the research. Chapter two provides an overview of agriculture finance in Tanzania, the actors of agriculture finance, presenting agriculture financial gap that exist in Tanzania and microfinance contribution in agriculture. Chapter three presents methodology of the study. It gives the brief description of the research area, explains the way the research was conducted, the methods and techniques adopted. Chapter four contains the findings of the study, data analysis and the discussion of the results. Chapter five summarizes the study, provides policy implications, limitations encountered, conclusion and recommended areas for further studies.

CHAPTER TWO

2.0 Literature review

This chapter explains the definitions of various concepts. It further provides an insight on various theoretical and empirical evidence on the study, to spot the results obtained by different researchers and working papers published that are crucial to the study at hand. Furthermore this chapter elaborates the conceptual framework, which direct to the formulation of the model.

2.1 Definition of concept

Agriculture: Generally agriculture is the process of crop cultivation and animal keeping.

Tanzania agriculture and livestock policy, (1997) defined agriculture as that area of human activity involving all aspects of crops and livestock. According to Rubenstein, (2003) agriculture is deliberate effort to modify the portion of Earth's surface through the cultivation of crops and livestock rising for sustenance or economic gain.

However this study covers only crop cultivation and ignores the side of livestock keeping. It because unpredictable results that limit accessibility of microfinance services are unlikely to affect animals, as is cited to be caused by unpredictable weather.

Agriculture finance may be defined as the financing and liquidity credit provided to farm borrowers. Or may be defined as financial intermediaries that provide loan funds to agriculture, and the financial markets in which these intermediaries obtain their funds. (Ali, 2008) In broad case, agriculture finance is all economic and financial interfaces between agriculture and the rest of the macroeconomics, including the effects that changes in national economic policies have upon the economic performance of agriculture and the financial position of farm operator families (Ali, 2008). Andrews, (2006) define agricultural finance as a subset of rural finance dedicated to financing agricultural related activities such as input supply, production, distribution, wholesale, processing and marketing.

In this study agriculture finance means all form of financial income, planted in the whole function of agriculture, either from personal income, friends, donor support, government, informal financial intermediaries and microfinance institutions.

Access to finance: Access to finance is not the same as use of financial services. Access refers to the availability of a supply of reasonable quality financial services at reasonable total costs, with these costs reflecting all pecuniary and non-pecuniary costs. (Claessens, 2006)

Microfinance: The term microfinance means providing very poor families with very small loans (microcredit) to help them engage in productive activities or develops their tiny businesses (The Microfinance Gateway, 2008). Hossain (2002) defines MF as, the practice of offering small, collateral free loans to members of cooperatives who otherwise would not have access to the capital necessary to begin small business or other income generating activities.

The term `microfinance' refers to the wide range of organizations such as NGOs, credit unions, cooperatives, private commercial banks, state-owned banks, and non-bank financial institutions dedicated to provide financial services (Christen, 2003).

2.1.2 Agriculture in developing countries

Agriculture is the primary economic sector in developing country that employs high portion of the population. Apart from the production of oil, gold, diamond, between 60 and 90% of the population of the developing countries lives directly on the agriculture. The national product is gained to a large part from agriculture sector and foreign exchange incomes originate to a large extent from the export of agricultural products, particularly from cash Crops (Agriculture in developing countries, 2011).

Despite of being the mainly dependent sector in the economy of almost all developing counties, poverty, hunger and malnutrition are typical problems in developing countries. The cause for such situation lies in the fact that, agriculture is not able to supply the rapidly growing population with a sufficiently high quantity of food.

Also agriculture production is reported to be underutilized in most of the developing countries. According to FAO (2004), about 20 percent of the total populations in developing countries are chronically undernourished.

2.1.3. Nature of developing countries finance

Developing counties have experiencing low term finance. Having a bank account and credit card seems normal to many people, but for more than 2.5 billion people in the developing world, are excluded from the formal financial sector. They have no access to savings, current accounts, credit or other basic types of financial services (Confino, J).

Formal and semiformal rural financial intermediaries have limited or nonexistent means to transfer credit risk to third parties. For example, portfolio securitization or credit insurance, which was common in mortgage and consumer finance markets in developing countries prior to the 2008 financial crash, is grossly underdeveloped. Insurance policies and agriculture insurance market that could serve to reduce credit risk for financial institutions is also underdeveloped, For example, agricultural premiums totaled US$18.5 billion worldwide in 2008, but the United States and Canada accounted for 62 percent of the premium volume. Latin American, Asian, and African regions, home to most of the lower-income countries, accounted for 21 percent, or US$3.88 billion. Moreover, the leading countries in terms of agricultural insurance development, the United States, Canada, and Spain all depend on heavily subsidized schemes that would be difficult to replicate in other places (Confino, J).

2.1.3.1. Specifically rural and agriculture finance in developing counties is limited by;

Lack of diversification of the rural economy and covariant risk: Covariant risk arises when many farms or households in one area are adversely affected by a single phenomenon such as drought, flood, and epidemic, unexpected changes in world prices, macroeconomic crisis or civil conflict. This is distinct from individual risks, which randomly affect individual households. Individual risks relate more to individual illness, predation on livestock, old age, job loss, crime, etc.

Political meddling and crowding out: Politicians often use rural development programs to gain political support. Often is accomplished through subsidized credit programs, which may results in market distortions and crowds out potential financial institutions in the area.

Impact: The impacts of these constraints on lenders are higher operating costs, increased information costs (owing to the heterogeneity among communities and farms), and higher real and perceived risk.

2.1.4. The concept of microfinance in developing countries

In developing countries microfinance is considered as noble substitute for informal credit and to be a powerful instrument for poverty alleviation among those who are economically active but financially constrained (Murdoch&Haley, 2002). It's not considered as a panacea for poverty and related development challenges, but rather an important tool in the mission of poverty eradication (Microfinance in Africa, (MA). Also Elizabeth 1994 pointed that, financial services do not create economic opportunities directly. Rather, they help people and enterprises position themselves to take advantage of opportunities.

The concept of microfinance has gained widespread support among policymakers, and been lauded for its potential to transform lives. But it has also come under closer scrutiny in recent years, with some questions raised about the effectiveness of microloans in particular as a way of combating poverty. The Guardian roundtable discussion, held in association with Barclays, provided an opportunity to debate these issues, examining the role of microfinance as we move towards a post-2015 development agenda and addressing some fundamental questions about its purpose, the forms it should take, and how it can be scaled up.

The growing concern has resulted in the formation of Banking on Change in 2009, an initiative to expand financial inclusion in Africa, Asia and South America by increasing participation in village savings and loans associations (VSLAs) with the group participant from Barclays, Plan International and CARE International. Also the governments have allowed free operation of microfinance to increase competition and availability of credit

2.1.5. Agriculture finance in Tanzania

Since 2006 financing of the agricultural sector has been mostly through the ASDP framework. (Financing agriculture sector development in Tanzania (FASDT), 2012).

The ASDP is financed through the General Budget Support (GBS), a Basket Fund, stand alone projects and the private sector. Currently, there are five Development Partners in the Basket Fund that financing agriculture, this include the World Bank, Government of Japan, Irish Aid, International Fund for Agricultural Development (IFAD) and African Development Bank (AfDB).(FASDT, 2012).

At the national level, financing is done through the MTEF system as per budget guidelines. The stand alone projects include PADEP, DASIP and ASP in Zanzibar. At the local level, financing is done through a variety of specific transfer modalities that are based on the Local Government Development Grant performance criteria and also aligned to ASDP objectives (FASDT, 2012).

2.1.6 Trend of Agricultural financing and current financial gap in Tanzania

The trends in agricultural financing in Tanzania from 2001/02 to 2010/2011 show that, in nominal terms the total agricultural resource allocation has been increasing over time.

For example, during financial years 2001/02 and 2004/05 the total budget allocated to agricultural sector was Tshs 52, 072 million and Tshs 3,347,539 million which were equivalent to 3**%** and 4.7**%** of the total government budget respectively and the figure increased to5.8% and 7.2% in 2005/06 to 2007/08 respectively. During financial years 2009/10 and 2010/11 the corresponding figures were Tshs517.611 billion and Tshs903 billion which can be translated into 7.6**%** and 7.7**%** of the total government expenditure respectively (FASDT, 2012).

However despite of increasing government support, from Tshs52, 072 million in 2001/2002 with increasing ratio up to 1,326,714,603,233 Tshs in 2012/2013 the financially crisis in agriculture was still predominant challenged. The crisis is not a new phenomenon in developing country, but its underlying effect has been increased parallel with the population and now it is termed as development challenge.

Taking the example of current situation, For the period 2010/2011 to the end of the current phase of ASDP in 2012/2013 the financing gap as indicated in Table 1 below shows a cumulative gap of Tshs1,348.31 billion (US$1,037 million). This is an average of Tshs450 billion (USD 345.6 million) per year over the next three years. Projections to 2014/2015 show the cumulative financing gap will be Tshs 8,257 million (US$ 6.35 billion) (FASDT, 2012).

Table 2.1 Agriculture sector financing gap in Tanzania, from 2010/11-2014/2015

	2010/11	**2011/12**	**2012/13**	**2013/14**	**2014/15**
DPS commitment	175,835,883,000	74,906,910,000	54,074,200,000		
Government contributions	727,964,117,000	982,751,557,950	1,326,714,603,233	1,791,064,714,364	2,417,943,364,391
Farmers contributions	117,990,800,000	138,910,574,161	180,614, 528,841	243,829,613,935	329,169,978,813
Total fund available	1,021,790,800,800	1,196,569,042,111	1,563,403, 332,074	2,034,894,328,299	2,747,107,343,204
Actual requirements	1,229,497,195,135	1,659,821,213,432	2,240,758,638,133	3,025,024,161,480	4,083,782,617,998
Financial gap (Tsh.)	207,706,395,135	463,252,171,321	677,355,306,060	990,129,833,180	1,336,675,274,794
Financial gap (USD)	159,774,150	356,349,821	521,042	761,638,333	1,028,211,750
Fin. Gap as %-age of total requirement	16.89	27.91	30.23	32.73	

Source: (FASDT, 2012).

2.1.7. Micro finance institution financing agriculture in Tanzania

Micro finances involving in financing agriculture are: **CRDB-** CRDB has been financing agriculture requirement though direct credit support to the farmers, and indirect by providing loan to SACCOSs branches.

NMB: NMB's is the most popular bank in the country with branches in all districts; provide the financial services to businessman, employed and farmers. Specifically the most popular strategy that link to farming activities is the Kilombero strategy which provides credit to sugar cane out-growers. The Kilombero strategy encourages growth through loans for the use of capital and growth to both small and large enterprises

Barclays Bank: Barclays was recently introduced a new scheme to support commercial farming (Provide farm inputs and equipment straight from the supplier).

FBME Bank combined with insurance cover for stock in warehouses together with **NMB Bank.**

USAWA SACCOs- the network supported by FERT in Kilimanjaro, have developed certain innovations for agricultural lending,

The Agricultural Input Trust Fund (AGTIF) was established by the GoT in 1994. It provides loans that can be accessed (for inputs and tractors) through various banks and SCCULT.

Dunduliza Limited: Dunduliza is a company limited by shares, an off-spring from FISEDA, registered in 2004. Dunduliza receives funding from FSDT, and technical assistance from

Desjardins International Development (DID). Dunduliza has 34 associated SACCOs (52,000 members) in three regions: Ruvuma, Lake Zone and Dar es Salaam. Services include training to the SACCO staff and leaders, material support (building, safe, stationary, furniture and MIS), salary for the SACCO-manager and intensive performance monitoring. Dunduliza – as a network – is aiming to become licensed by the BoT as a FICO. Dunduliza also borrowed funds from AGTIF in 2006, for on-lending to its SACCOs and **Tanzania Fertilizer Partnership** (involving IFAD, Ministry of Agriculture and others) aims to upgrade the agricultural supply chain, including fertilizer input. (Duursma, 2007)

2.2. Literature review

Agriculture finance is guided by various theory and model explain that developing country with low saving rate, the rate of needed GDP growth can be plugged by loan/ credit. It further review the theory that explain if microfinance can fill the gap, the limiting factors and give the details on how can microfinance fill the gap.

2.2.1 Rostow model

Rostow's theory of development suggests that, development requires substantial investment in capital equipment. To foster growth in developing national the right condition for such investment would have to be created.

Saving and capital formation accumulation are central to the process of growth, hence development. The key to develop is to mobilize savings to generate the investment, to set in motion self generating economic growth. Development can stall at take off stage for lack of saving. If 15-20% of GDP growth is required and domestic saving rate is 5% then international aid/loan must total 10-15% in order to plug the saving gap. Resultant investment means a move to a stage 4 drive to maturity and self generating economic growth

Strength. Rostow suggest that in order to move from take of stage, which is the stage most the developing countries are, to maturity stage loan or aid is needed to plug saving to the rate of needed growth rate of GDP. According to Rostow the different between the rate of growth needed in the economy and the saving rate is the financial gap that the loan (microfinance in this case) is expected to fill in.

Weakness. Rostow explain the necessity of loan (microfinance) to shift up the economy, but he didn't consider the accessibility of that loan as a limiting factor for filling gap and the problem associate with loans, especially in developing countries. Generally Rostow does not explain the experience of country with different culture and traditional e.g. sub Saharan countries which have experienced little economic development. He considered development experience of western countries (Todaro and Smith, (2009).

2.2.2 The High-Payoff Input Model

High-payoff input model was developed in 1960 by T. W. Schultz as a key to transforming a traditional agricultural sector into a productive source of economic growth to farmers in poor countries. He insisted that peasants in traditional agrarian societies are rational allocators of available resources and that they have remained poor because most poor countries provide them with only limited technical and economic opportunities to which they can respond, thus they are "poor but efficient." If given the inputs and know-how of their modern counterparts, they too could succeed,

Peasants in traditional agricultural systems were viewed as rational and efficient resource allocators.

Strength. The mode explain that developing country lack economic opportunities that they can respond to. He generally view that financial services to the farmers is low because of lack of opportunities. That the microfinance is still low performing to fill the financial needs of the poor. In his model he views the developing country as "poor but efficient".

Weakness. The high-payoff input model remains incomplete as a theory of agricultural development. The mechanism by which resources are allocated among education, research, and other public and private sector economic activities was not fully incorporated into the model.

2.2.3 Standard theory stated by Todaro and Smith, (2009) explain that "a rational income or profit maximizing farm or firm, will always choose a method of production that will increase output at given cost(in this case the available labour time) or lower cost at given output level. According to the theory, allocation of fund is not the problem the problem is lack of fund".

He further explains `that uncertainty and risk - adverse behaviour of peasant farm limit the accessibility of credit and insurance. That given price uncertainty, peasant farmers often face price bands (often wide ranges) rather than single input price. Along with limited access to credit and insurance, such an environment is not conducive to the type of behaviour posited by new classical theory and goes a long

way toward explaining the actual risk-averse behaviour of peasant farmers, including their caution in the use of purchased input such as fertilizer. (Todaro and Smith, 2009)

Strength: The theory stated clearly that lack of fund is the major problem that affects output in agriculture, and risk adverse behaviour is the main limiting factor that limits the accessibility of credit which will help the farmer to cover the financial gap. Thus microfinance cannot fill the financial gap to the farmer because its service is still limited and the farmer miss the provision of microfinance because of risk and uncertainty.

Weakness: The assumption that the farmers are rational in choosing the method of production that will maximize output at given cost, thus allocation of fund is not the problem but the problem is lack of fund is pretty unrealistic especially in developing countries.

Standard theory will be the leading theory of this research, because it gives the best explanation of the risk-averse behaviour of the farmers in limiting the useful measure of credit and thus lack of fund is still the problem for agriculture growth.

It is consistence with this study since the problem that thrust the researcher to go into the field is to find if microfinance can be able to fill its role of filling agriculture financial gap, despite of risk involved in financing agriculture.

2.3 Empirical review

Kimaro at al (2012), assessed Micro-Finance Services in Agricultural Sector Development in Tanzania, and conclude that high interest rates were significant barriers to borrowing decisions, which limit accessibility to microfinance in which the ultimate result being failure to fill financial gap. He further said that women tend to own no land therefore the possibility of having large scale is low thus have high possibility of covering their financial gap.

Harper (2005) conducted a study in developing countries with the aim to find out if there are critical mismatch between farm credit and microfinance. His study found that, microfinance services is very limited since there are very few MFIs that

ventured into farm credit and their loans are used mainly for consumption of off-farm investment. In his study he further concluded that the rate of return from the investment is lower than the interest rate in most microfinance institutions.

Moreover the study conducted by Irou and Onyeneke (2012), used regression analysis to analyze social economic effect of microfinance on small poultry production in Imo state Nigeria. The study found that age of the respondent, education level, volume of loan obtained and member of cooperation society has significance influence on poultry production.

Likewise Karlan and Zinman (2006) conducted a study in South Africa, their result show that recipients of micro credit are better off than non beneficiaries. Khan and Rahaman (2007) in the Chittagong district in Bangladesh reported that recipients of microfinance facilities improved their livelihoods and moved out of poverty therefore they empowered themselves and become very active participants in the economy.

Alam (1988) made a study to measure the productivity growth of the Grameen Bank members. His study was confined within comparing the agricultural productivity alone. His findings suggest that the small and marginal farmers as a result of participating in the Grameen Bank programs can allocate a higher percentage of their land for the cultivation of high-yielding varieties (HYV) and have improved their agricultural productivity. His studies showed that the users of microfinance can bring 81.5% of their cultivable land under HYV Boro production compared to 76% of the non-users. Yield of the users of microfinance for HYV Boro was 47.6 maunad per hectare while it was 38.2 for the non-users.

Islam & Tenaw (2009) study rural financial services, and effect of microfinance on agriculture, they revealed that micro credit had marginal impact on the agriculture sector as microfinance institutions (MFIs), limit their lending to those possessing less than half an acre of land (the functionally landless). As a result marginal and small farmers are frequently termed as “missing middle." So their conclusion was people who possess low scale tend to miss out financial services from microfinance. He further found that government subsidy, have positive impact on agriculture

productivity and point high interest rates as a limiting factor to access financial services.

Mushinski (1999) grouped people who have credit and who have access and those who did not.

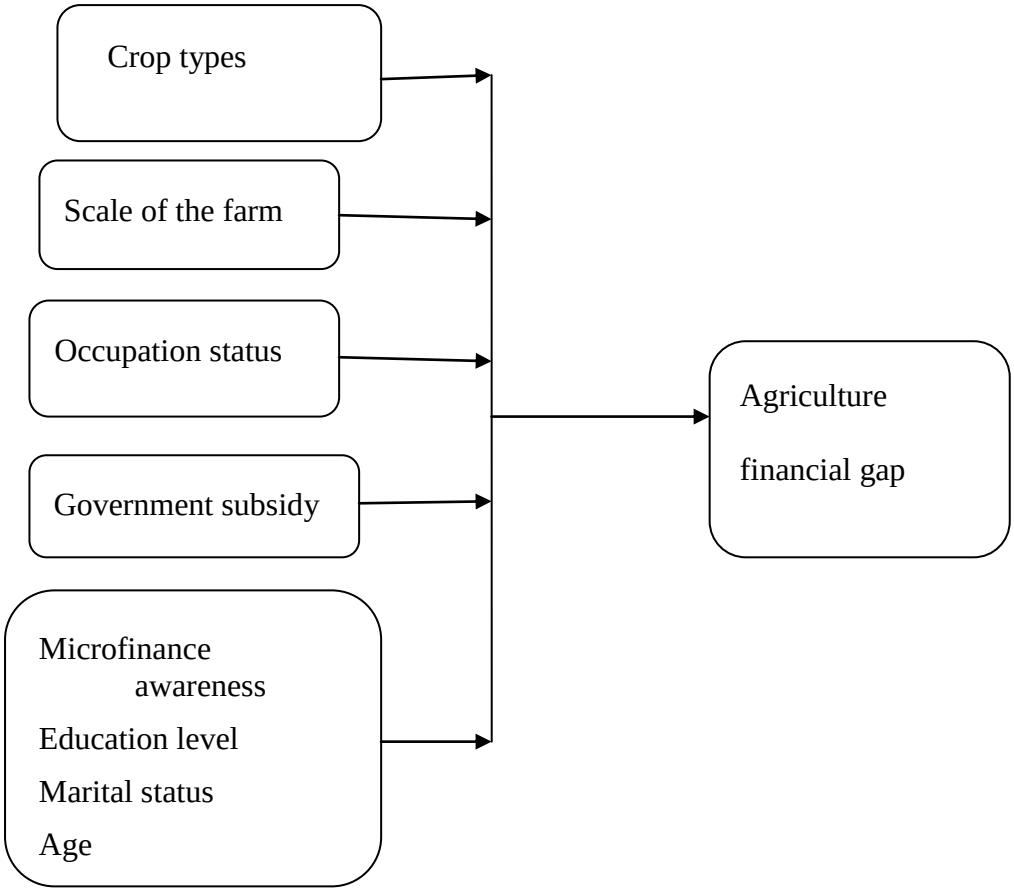
The group of people who did not have credit was then divided into three groups:

i) Those who did not want or need to borrow but potentially could.

ii) Those who had applied and been rejected.

iii) Those who had not applied for fear of refusal or because of high transaction costs. He used the logit model to measure the accessibility of microfinance to the farmers and found that microfinance services are very limited to the farmers. Education of the respondent and sub district dummy, are cited to be significance influence access to credit, while past credit have negative effect on access to credit. His conclusion was, in viewing loan accessibility to the farmer, what matter is not only the size of the farm but also location and past application of the credit.

2.4 Conceptual framework



Source; The researcher

2.4.5 Agriculture financial gap

Agriculture financial gap is the raise of farm requirement over the financial available. It is the dependent variable which will be responded by either "yes" if microfinance can fill the financial gap and "no" if microfinance can not fill the gap.

The possibility of microfinance to fill the gap depends on amount of credit the farmer receive from microfinance, farming financial cost and other initiative the person have. Therefore the influential variable for microfinance to fill the gap was; occupation status, level of education, farm size, types of crops, microfinance awareness, sex, age and marital status.

2.4.5.1 Sex

In this research female was distinguished from male, to see the possibility of microfinance to fill agriculture financial gap depending on the sex of the respondent.

2.4.5.2 Education of the respondent

Education is the knowledge acquired though learning. In this research the levels of education the person have is the influential factor on the possibility of microfinance to fill the gap. The level of education was grouped into, primary level. Secondary level, university and none educated. The non educated farmers were considered as illiteracy and those with primary, secondary and university education were considered as literacy.

2.4.5.3 Occupation status

Occupational status is a fundamental measure of social standing that reflects the distribution of power, privilege, and prestige associated with positions in the occupational hierarchy, and is the key measure of socioeconomic status (Hauser and Warren 1997). In this research the variable is used to show if occupation status of the farmer is an influential factor on possibility of microfinance to fill the gap. The farmer was distinguished as businessman, peasant and employed.

2.4.5.4 Scale of the farm

The size of the farm was the independent variable categorized into small scale, medium scale and large scale. The category depended on the size the farmers possess. Below three acre was regarded as small scale, three to five acre was regarded as median and above five are large scale farm. As the size of the farm increase, the financial cost increase and affect the possibility of microfinance to fill the gap.

2.4.5.5 Government subsidy

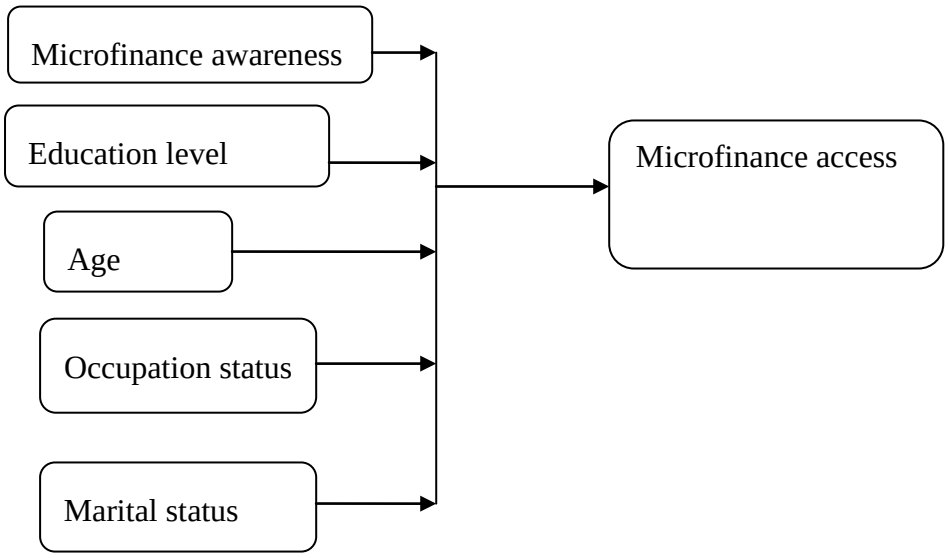
Government subsidy is termed as the financial initiative aim to finance the poor farm to meet their finance. For some the financial from the government can help them to meet their requirement and for other it increases the possibility of microfinance to fill

the gap because the financial can decrease the gap and left microfinance with small gap to cover.

2.4.5.6 Crop type

The farm requirements tend to differ with types of crops, for microfinance to fill the gap. Other crops require high financial cost than the other.

Microfinance access



Source the researcher.

2.4.2 Microfinance access

Microfinance assess refers to the availability of supply of reasonable quality financial services at reasonable total costs, with these costs reflecting all pecuniary and non-pecuniary costs (Claessens, 2006). In measuring accessibility to loan, farmers were grouped into four.

Those who never apply but potentially could.
Those who applied but they have been rejected.
Those who receive the credit but not the same amount they applied for.
Those who receive the same amount they applied.

Those who applied and get the same amount were considered to have microfinance access, and other three groups were considered as not having access to microfinance

credit. However the possibility of farmers to have access to microfinance depend on microfinance awareness, security/collateral, entrance fee and repayment assurances which is pre determined by level of education of the respondent, microfinance awareness, occupation status, size of the farm, age, sex and marital status.

CHAPTER THREE

3.0 Research methodology

3.1 Study area

The study was conducted in Iringa rural district. Iringa was preferred because is among the biggest regional in the country that specialize in farming activities, thus it was definitely easy to get sufficient and reliable data. Also the region forms part of the southern highland zone of Tanzania, characterized by pleasant climate and high rainfall, therefore financial crisis was presumed to be the major causes for lower performance of agriculture in the area studied. The district was then preferred because is the largest district in the region, with highest land area for agriculture practice. It covers different climatic condition and different types of crops,for exploring the underlying effect of types of crop farming toward the possibility of microfinance to fill agriculture financial gap. Also the researcher is familiar with the environment**.**

3.2 Description of the study area

Iringa rural district is the largest of the four districts forming the Iringa region. The district is suited North- east of the region, boarded by Dodoma region in the north, Kilolo in the east, to the south it borders Mufindi district and encircles Iringa urban district, to the southwest by the Mbeya Region and to the northwest by the Singida Region.

It is located between latitudes 6^0 55^1 and 10^0 30^1 south of the Equator and between longitudes 33^0 45^1 and 36^0 55^1 east of Greenwich. The district's total surface area is 20,576 sq kms. The total land area is made up of 19,897.5 sq. kms making Iringa rural district the largest district in the region. The region's water area is 678.5 sq. kms. In general land area makes up approximately 96.6 percent of the total surface area and the water area is 3.4 percent. Iringa rural have 6 divisions, 20 wards and 119 villages.

According to 2012 Tanzania national census, population of Iringa rural district was 254032. The district is indigenous dominated by Hehe, the tribe which is long described as hard working, independent and rich in culture. It reveals from history

when the colonizing Germans set about to dominate and subjugate Tanzania, they met the most serious resistance in the country from the people of Iringa, led by their chief, Mkwawa the Great. The aggressive and independent nature of the people of Iringa nowadays finds its expression in hard and enterprising work which has resulted in giving the region the highest income per capita in Tanzania Mainland except for Dar es Salaam.

Irrespective to the ethnicity, people are more engaged in agriculture, followed by livestock keeping then fishing, industrial activities and finally the wildlife.

Agriculture approximately employs more than 70% of the population in the district. The average area (hectares) cultivated under food and a cash crop annually per household is 148,110 and 17,730 respectively.

However the types of crops grown differ from one area to another depending on climatic condition. For stance the midland zone, such as Mlolo, Kiponzelo, Kalenga divisions, Kihorogota and Nduli wards of Ismani division have temperatures between 150 and 200 C Rainfall average between 600 and 1,000 mm p.a. the favoured crops are maize, beans, sweet potatoes, cowpeas and fruits. While lowland areas (Pawaga and Idodi divisions, Katenza, Izazi and Malengamakali wards of Ismani division) have temperatures between 150 and 200 C Rainfall: 500-600 mm p.a. Crops farming are drought resistant crops (sorghum, cassava) groundnuts, paddy, bananas, vegetables, fruits.

The financial services available in the form of banks and microfinance organizations are PRIDE, FAIDIKA, BRAC, BLUE FINANCE, SACCOs NGOs and VIKOBA.

3.3 Research design

The researcher used cross section research design, in which data was collected once (photo snapshot). Cross section design is the best suited to the study aimed at findings out the prevalence of a phenomenon, situation or problem. It is useful in obtaining an overall “picture” as it stands at the time of the study.

Therefore this design is the best for this study since the aim of the research is not to measure the pattern of change. Also the method has the advantage of generating correct data at relatively low cost.

3.4 Sampling design

The sample in which the study was carried was selected by using stratified sampling design because the population from which a sample was drawn does not constitute a homogeneous group. Some are practicing small scale, other larger and other medium scale, therefore stratified sampling design was chosen to obtain the needed sample. The population was stratified into a number of subpopulation consist of small scale, median scale and large scale. Then from each stratum simple random sampling was used.

3.5 Study population, sample and sampling procedure

The specific target population underlying the sampling technique are farmers, in Iringa rural district. The total numbers of people who practise agriculture are 178,019 (Population census, 2002). Because of limited time and financial resources it's very unlikely to survey all farmers in the area. Therefore the sample was selected from the total farmers in the district.

The study adopted the Kothari formula of calculating the sample size from the population.

$$n = \frac{z^2 . p . q \; N .}{(N-1) e2 + z2 \; p.q}$$

Where

N = size of population

n = size of sample

e = acceptable error (the precision)

p= sample proportion, $q = 1 - p$

z = standard variety at a given confidence level

z=1.96 (area of normal curve for the given confidence level of 95%)

e= 0.02 (by assumption; estimate should be within 2% of true value)

Therefore P= 0. 02 and q = 1-P = 0.98

The total numbers of farmers were 178019

$$n = \frac{(1.96)^2(0.02)(0.98)(178019)}{(0.02)^2(178019-1)+(1.96)^2(0.02)(0.98)}$$

$$n = \frac{13404}{71.2825}$$

n =188.0406 ≈188

From the above formula, 188 respondents were drawn from the total farmers in the district. However simple random sampling was used to select the wards and division. Out of six divisions in Iringa rural district, three were randomly selected, by listing them alphabetically and chose the odds listed one. From this result, kalenga, kiponzelo and pawaga were the selected divisions. Then from all three divisions the sample was used based stratum of small scale, median scale and large scale. The distributions of respondents used from each division were as follows: 56 respondents from kalenga, 62 from kiponzelo and 70 from pawaga.

3.6. Types and sources of data

Primary data was collected from individual farmers found at Kalenga, Kiponzelo and Pawaga in Iringa rural district. All information about how they finance their farming activities and information on individual farm scale, government subsidy, access to microfinance and their influence on agriculture financial gap was primary collected from the farmers. They also described the financial initiative in Iringa district, with additional information from community development officer.

Secondary data were collected through documentary review whereby various books, reports and journals were read.

3.6.1 Data collection method

The data was collected through the use of semi structured questionnaire. The questionnaires were composed of open and closed ended questions which also demanded numerical data to fill in. For clarification of data the respondents were interviewed and their responses were noted down on the questionnaire by the researcher. Also for some farmers, the researcher was participant observer on how they finance their agriculture undertaking.

3. 7 Data Analysis

The relationship between various economic variables is generally in exact or non deterministic (Gujarati and Porter, 2009). Therefore economists usually adopted what came to be known as econometric model to allow for the inexact relationship between economic variables. Based on these arguments, the general econometric model for the proposed study is formulated as follows;

In attempt to measure if microfinance fills the agriculture financial requirement, the analysis was grouped as:

The agriculture financial requirement

Short-term: input financing at the beginning of the crop year (seeds, fertilizers, pesticides), additional labor, feed, storage facilitates, processing, etc.

Medium and long term: equipment for intensification, commercialization (transportation), storage (buildings), perennial crops (investment, renewal, maintenance), (re)constitution of herds, land purchase.

For agriculturalist to meet the requirement must have access (enough supply of credit at reasonable cost, with these costs reflecting all pecuniary and non-pecuniary costs).

By adopting Mushinski (1999) procedure:

The study grouped those who receive the money required to fill the gap, and those who have not. The group of people who did not fill the gap was grouped as

i) Those who did not want or need to borrow but potentially could.

ii) Those who had applied and been rejected.

iii) Those who receive the loan but does not meet the requirement

Hence, our dependent variable (Y1) is equal to one for all households who get the amount of loan required to fill the gap and zero otherwise, then the binary logit model was used to estimate the gap to be filled

Y1: access to total amount required (1 if yes and 0 otherwise)

3.7.1 Data analysis method

Data management was done by using statistical package for social sciences (SPSS) version 16. After the management the data was analyzed by using logit model techniques. Econometrics analysis of the model was conducted by the use of STATA version 9.

3.8 The model and its estimation

The possibilities of microfinance to fill the gap can be responded by either "yes" or "no". The interpretation of the logit model was by means of the log of odds ratio: This means the log of the probability of microfinance to fill the gap over probability of microfinance not filling the gap is linearly related to the regressors.

3.8.1 Why logit model

The excepted outcome is whether microfinance fills the existing financial gap to the farmers, which can be responded by either yes or no. Since the dependent variable is qualitative in nature it's doomed to use either linear probability model, logit or probit model. In this study, logit was preferable over the other because, unlike linear probability model, logistic regression can ensure that $0 \leq E\,(Yi \mid X) \leq 1$.

Also according to Gujarati, 2004) the fundamental problem with the Linear Probability Model is that it assumes that $Pi = E(Y = 1 \mid X)$ increases linearly with X, that is, the marginal or incremental effect of X remains constant throughout. So this problem is avoided if we use logit model.

Compared to probit model, logit was preferred because it's practically mathematical simplicity.

3.8.2 The models

Can microfinance fill agriculture financial gap:

$Y_i =$

$$ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 Age + \beta_2 Sex + \beta_3 Occp + \beta_4 Sub + \beta_5 Awr + \beta_6 Scale +$$

$$\beta_7 Crops + \beta_8 Edu + \varepsilon_i$$

Microfinance access model:

$Y_i =$

$$ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 Age + \beta_2 Sex + \beta_3 Occp + +\beta_5 Awr + \beta_6 Scale + \beta_8 Edu + \varepsilon_i$$

Y= 1 if microfinance fill the gap and 0 if does not fill the gap.

p Is the probability that microfinance fill the gap where as $_1$-p is the probability that microfinance can not fill the gap

Age = Age of the respondent
Sex = Sex of the respondent
Edu = Education level
Occup = Occupation status
Sub = Government subsidy
Scale = Scale of the farm
Awr = Microfinance awareness
Crops = Types of crops

ε_i- represents the error term of the model, defined as the basket of all factors that are assumed to be constant but have influence on the regressand.

3.8.3 Model estimation

The equation will be estimated by means of binary logit. This means the log of the odds ratios: the probability that microfinance fill the gap over the probability of not filling the gap is linear related to the regressors.

L1=In (1) if microfinance fill the gap

L1=In (0) if microfinance does not fill the gap

The expression will be as follows:

Probability that it get the access of the entire requirement

Y_1=1 if microfinance fill the financial gap or 0 if it doesn't fill the gap.

$Y_1= \beta_1 + \beta_2 X_1 + \mu_i$

The condition expectation of Y_1 is given by X_1 E (Y_1/X_1)

So the probability that the gap will be filled given the provision from microfinance is P(Y=1/X1)

E (Y1/X1) = the probability that the farmer will meet the requirement given provision from the microfinance.

Since expectation of residual is equal to zero ($E\mu_1=0$) to obtain unbiased estimator

$EY1/X1= \beta 1+ \beta 2X1$

Now, if *Pi* = probability that *Yi* = 1 (that, the event occurs), and (1 − *Pi*) =

Probability that *Yi* = 0 (that the event does not occur).

3.8.4 Statistical test methods

Before running regression analysis in logit model eleven classical assumptions of original least square model must be satisfied to obtain best linear unbiased estimator, accurate and good fit of the model. Some of the assumption, including, "Number of observation must be greater than, number of regressors, sufficient variability of value taken by regressors can be easily satisfied, but some of the assumption require further test, and measure to control, as explained hereunder.

3.8.4.1 Multicollinearity test

Assumption 10 of the classical linear regression model (CLRM), assume there is no multicollinearity among the regressors included in the regression model.

Multicollinearity is a statistical phenomenon in which two or more predictor variables in a model are highly correlated. It occurs when two or more independent variable are approximately determined by a linear combination of other independent variable in the model.

Because of linear relation between independent variable, OLS estimators and their standard errors can be sensitive to small changes in the data and the OLS estimators will have large variances and covariance's, making precise estimation difficult. Therefore before running the regression analysis linear relation between independent variable must be detected and corrected.

The study used Tolerance or Variance Inflation Factor (VIF) to detect the presence of multicollinearity.

Tolerance = $1- R^2_J$, VIF = $\frac{1}{\text{Tolerance}}$

Where R^2_J = the coefficient of determination of a regression of explanatory $_J$ on all other explanators.

Rule of thumb: Tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 and above indicate a multicollinearity problem. (O'Brien, 2007)

3.8.4 2 Heteroscedasticity

Heteroscedasticity occur when the variance of the error term change across observation. Heteroscedasticity can be very problematic with methods besides OLS. For example, in logistic regression Heteroscedasticity can produce biased and misleading parameter estimates.

The study used visual inspection of residuals plotted against fitted values: the plot of the Independent Variable to see if there is constant variance across residual.

Rule of thumb: The constant perfectly horizontal line in the graph shows that the variance across residual is constant (no heteroscedasticity), otherwise there is heteroscedasticity problem.

3.8.4.3 Goodness of fit of the model

Assumption 9, is that the regression model used in the analysis is "correctly" specified: If the model is not "correctly" specified, we encounter the problem of model specification error or model specification bias

The goodness of fit of the model was measured by pseudo R square. In logistic regression the variance is fixed so pseudo R square measure the proportion in term of the log likelihood.

Also the goodness of fit of the model was measured, by checking, overall significance of the model. If the significance level is below 5% we reject the null hypothesis then the model is correct specified, otherwise there is miss specification of the model. Further the number of significance independent variable will also verify how much independents variable explain dependent variable.

3.8.4.4 Autocorrelation test

The term autocorrelation may be defined as "correlation between members of series of observations ordered in time (in time series data) or space (in cross-sectional data). In the regression context, the classical linear regression model assumes that such autocorrelation does not exist in the disturbances *ui*. Symbolically, E (uiuj) = 0 $i \neq j$ (Gujarati, 2007)

It assumes that the disturbance term relating to any observation is not influenced by the disturbance term relating to any other observation. The violation of the assumption can cause inefficient of estimator (i.e. minimum variance).

To avoid this ghastly effect the study used Durbin Watson test to test the presence of autocorrelation. According to Gujarati, 2003 the preferable value should lie between 1.1-1.9 otherwise there is autocorrelation.

3.8.5 Expected outcomes

Based on the general theory and empirical review the result of the formulated model is expected to be as follows.

Education of the farmer is expected to have positive influence on the possibility of microfinance to fill the gap. This is because the higher level of educations increases the farmer's response to microfinance services, as it increases awareness, and easy application procedure.

Based on occupation status, employed farmers are expected to have high influence on possibility of microfinance to fill the gap. This is because employed farmers have high access to credit due to the fact that their job can be used as security, and they have high assurance of being able to repay the loan even before crop harvest. Also employed farmers are expected to have high financial income, unlike peasant the financial gap that left to be covered by microfinance will be small. For the business men, the repayment will be easier for them, even before harvest since they can take money from the business, they can use their business as security and they have high possibility of having enough money to pay for entrance fee. The peasant can only afford the loan whose demand the repayment to be done after harvest.

Because two individual farmers can add up to their income, marriage respondents are expected to have high chance of meeting the farmer requirement unlike single and widow respondents.

The size of the farm is expected to have positive influence on possibility of microfinance to fill the gap, thus the possibility of microfinance to fill the financial gap increases as the size of the farm increase. Small scale farm are expected to have low income, low entrance fee, lack of security and low assurance of credit repay which limit the accessibility to microfinance credit and possibility of microfinance to fill the gap. Raman and Husain, (1995) named small scale farmers as "missing middle" because they frequently tend to miss financial loan from microfinance.

Unlike, paddy, Maize, tomato and potatoes grower are expected to have high expenses and high financial gap, which limit the possibility of microfinance to fill the gap

Microfinance awareness is expected to increase the possibility of microfinance to fill the gap as it increase microfinance access.

Government subsidy can help to decrease the financial gap, so the farmer who have access to subsidy are expected to have high possibility of filling their gap, because the gap left to be filled by microfinance will be small.

As the age of the respondent increase the possibility of microfinance to fill the gap is expected to decrease because aged person tend to be excluded from microfinance credit.

Female farmers are expected to have high possibility of filling their financial gap because the financial initiative favours women than men. And women have high access to microfinance because their member of cooperative group, which make them easily, qualified for a loan especially those institutions that provide loans in group.

Also in developing countries, women tend to own no land. This is because most of the lands especially in the rural are inherited, and men are mostly the one who inherit the land. So most of the female are expected to practice low portion of land, which does not require high financial cost therefore the financial gap can be easily filled.

CHAPTER FOUR

RESULTS, FINDINGS AND DISCUSSION OF THE RESULTS

4.0 Introduction

This chapter presents results and findings of the study. The main key issues, raised during scientific and systematic search for pertinent information on this topic to prove the assumption which states, *"Agriculture financing initiative in developing country; can microfinance fill the gap?"* have been discussed. Several data have been analyzed to prove this assumption as explained hereunder:

4.1 Sample size of the study and its characteristics

4.1.1. Sex of the respondent

The sample was composed of large number of female than male. Its only 75 male respondent (39.9%) while 113 (60.1%) were female. This is because female are more involved in practicing agriculture than male. This was also affirmed by National agriculture and livestock policy 1997, when they estimate male to female ratio of the total farmers in the country and found the ratio of males to females in the agricultural sector is 1:1.5. And they also found that women in Tanzania produce about 70% of the food crops and also bear substantial responsibilities for many aspects of export crops and livestock production. (Agriculture and livestock policy, 1997)

4.1.2. Age

The age minimum was 18 years and the maximum age was 78, so the range of the respondent (different between highest aged and the lowest age) is 60. The mean was 41.79 and standard deviation was 13.42, implies the average age of the respondent was 42 years and the number of age deviate from the mean by 13.42. The median class is 30-39, implies that majority of the respondent fall in the age of 30- 39 with the total of 64 frequency. It also show most of the respondent have experience enough to be able to identify the financial cost of farming, so they are full aware of how much credit they need to borrow to cover their financial gap.

4.1.3 Education level

The data show that 22 responded, equal to 11.7% had no formal education, 156 (83%) have completed primary school, 9 (4.8%) completed form four level and only one of the respondent (0.5%) have reached the university level. At least those with primary education were regarded as literacy. So the cumulative frequency of those who attend primary, secondary and university level (literacy) was 166 equal to 88.29%. It implies 88.29% of the respondents have education level necessary enough for seeking out microfinance services, including filling up loan application form, and able to read and understand the loan procedure, which will easy the accessibility of microfinance services.

4.1.4 Marital status

As regard to marital status, 6.9% of the whole respondents were single, 77.1% were marriage, 12.2 % were widow and 3.7% were divorced. The highest group of respondent were marriage farmers. It implies the highest group of the population have high possibility of filling their financial cost because marriage farmers can participate in finding the way to finance their farming together and they can even step in, in farming activities and reduce the labour cost and narrow the financial gap unlike those who are single, divorced or widow.

4.1.5. Occupation status

92.6% of the respondents have identified themselves as pleasant, 2.1% employed and 5.3% businessman. The high groups of people who practice agriculture are sole dependant in agriculture as their source of income. This was expected to limit the possibility of microfinance to fill the gap, because it lowers the possibility of having high income and limits the accessibility of loan from microfinance. The farmers who are solely depending on agriculture can only apply for loans which demand the repayment to be done after harvest. Employed people have job security, and have high assurance of being able to repay the loan, so they will be willing to borrow high amount enough to meet their requirement and it is easy for them to be approved for a

loan. For the business man, they can afford even for a loan that demands the repayment to be made before harvest, since they can take money from the business. The peasant can only afford the loan which demands the repayment to be made after harvest.

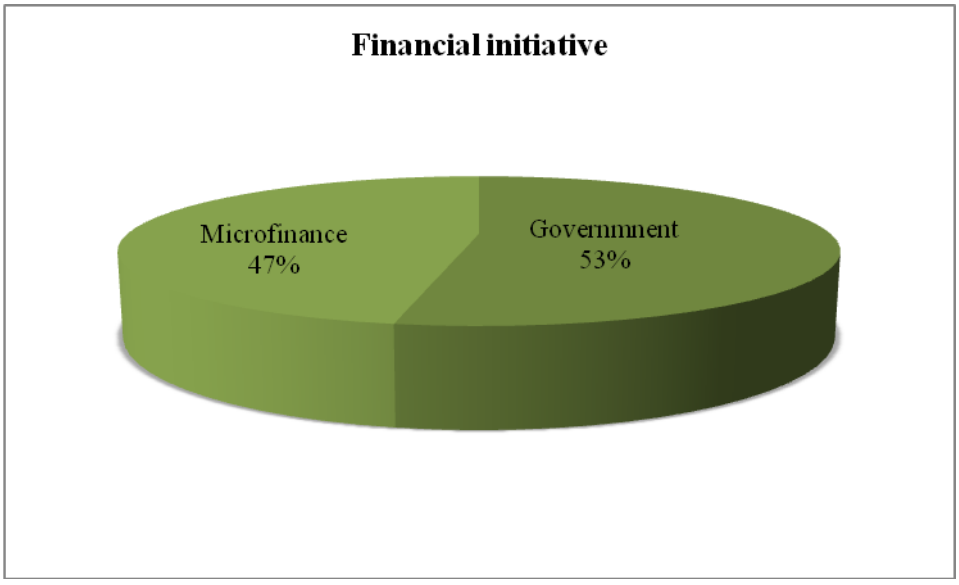
4.2 Financial initiative financing agriculture in Iringa rural district.

The initiative established to finance farmer in Iringa rural district are microfinance and government support, provided through input subsidy.

4.2.1 Government subsidy

Governments are the main provider of financial services in Iringa rural district. It provide subsidy in form of input, enough to finance one acre, with the farmer contribution of 40% of the total cost. The inputs provided are three bag of manure weighty 25kg and 10kg of seed. Apart from providing subsidy, for those who grow paddy, receive 100,000 Tshs loan, to be paid after harvest at 10% interest rate. But those who are growing paddy are excluded from the subsidy. Although its quantity, contribution is not high, more of the farmer has access to subsidy than it has to microfinance credit. Compare to the number of microfinance loan receiver, the figure show 53% of the farmer have receive subsidy while for microfinance loan is 47%.

Figure 4.1 financial initiatives in Iringa rural district



4.2.2 Microfinance

Microfinance branches are increasing and different institutions are involved in financing the farmers in the district. The main providers of financial services are Non government organization, finca, pride, saccos, and vikoba.

4.2.2.1 Non government organization

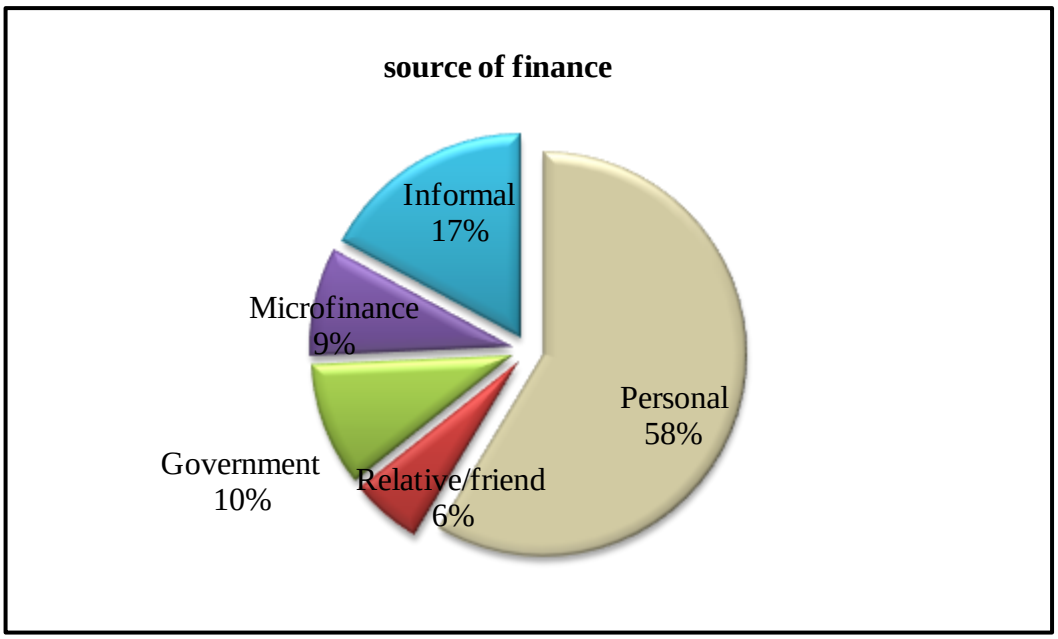
Non government organization that involve in financing agriculture in Iringa rural district is One Acre Fund Non Government Organization only, in which its impact cannot be judged since it only start in 2012. It provide credit inform of manure and seed enough to finance one acre. The amount of input provided is three bags of manure and two bags of seed, but the farmers have to contribute 110,000 Tanzania shillings, for all input provided.

4.2.2.2 Financial institution

Apart from non government organization, there are other microfinance's that provide financial credit to the farmers, mainly vikoba followed by saccos and pride, then finca. Most of the financial credits are received from vikoba, because unlike other microfinance, the repayment of the loan is done after harvest of the crops.

4.3. How the farmers in Iringa Rural district have been financing their agriculture undertaking

Figure 4.2: The way in which the farmers have been financing agriculture



Source: The Researcher

The above table shows that farmers depend on their personal income to finance their agriculture expenses. 58% of the respondents finance their agriculture undertaking through their personal income, 17% use informal institution, 10% use government support and 9% depend on microfinance loan.

Most of the respondents depend on their past saving income, and other few respondents are financing their farm by using the money from their business profit and job salary.

The next prevailing group are those who use informal financial institution. For those who grow paddy in Pawaga, borrow from their neighbour and friends or from Italian man who informally provide loan to the farmer. However the cost associate with this informal source are greater, since for each 30000, they had to pay one bag of paddy after harvest, equal to 100,000 at that time. Mathematically this is equal to say that; amount of interest is 333.33% for four month.

The tomato growers which are mostly found in Kalenga, have advantage of receiving financial credit from the businessman. This loan is interest free but it is given with the condition of selling crops to them after harvest at prevailing price. But sometime this forces the farmer to become price taker.

Microfinance services for many reasons have become unreliable to the farmer, and they rather substitute for informal institution than microfinance provision. The percent of the farmer who depend on informal institution is nearly twice of those who use microfinance loan. The percent of the whole farmer who depend on microfinance as their primarily financial support are only 9%. And the last group are those who finance their farming though the help of family or friend.

4.4 The number of farmers who have access to microfinance credit

4.4.1 Microfinance access

In attempt to answer the question on whether microfinance can fill the gap or not, is important to measure the level of access the farmer has in microfinance. And the farmer who will be viewed to have microfinance access are not those who have apply and receive the loan but those who receive the loan and the amount of loan received is the same as amount they apply. Because other qualifies for loan, but the amount they receive is not the same as the amount demanded.

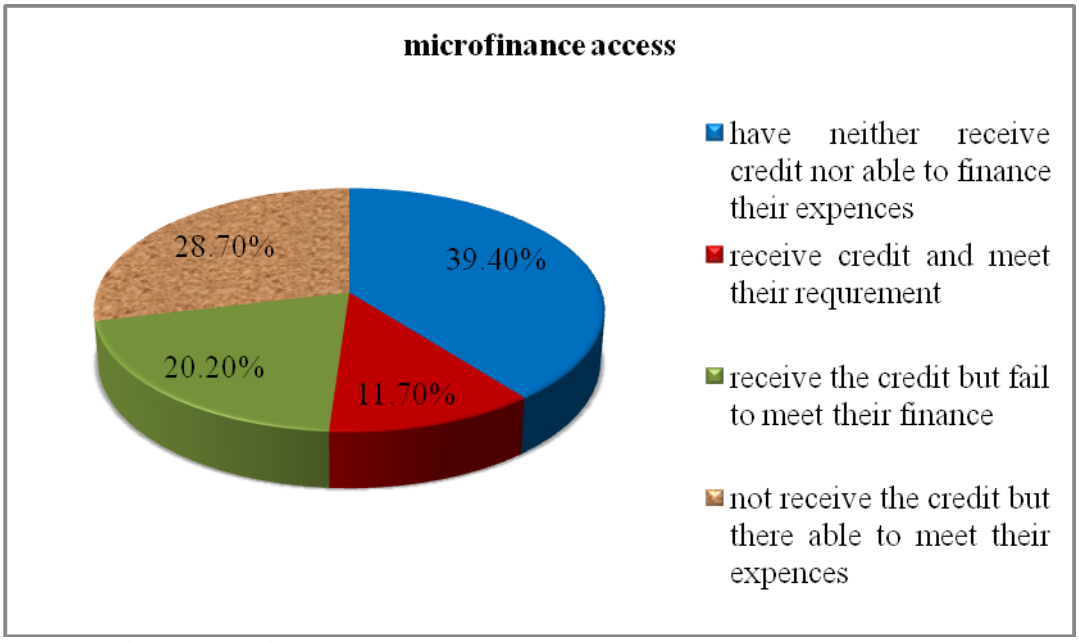
Although the access to microfinance will overstate the possibility of microfinance to fill the gap, because there other who are perceived to have access because they receive the same amount as they apply, but may be apply for what they believe they will be qualified for and not what is needed to meet their financial requirement. Farmer may have high financial cost but apply for small amount because, of low entrance fee, and low security. Microfinance access will give the preliminary information on the credit supply in relation to farmer demand.

Table 4.4 Access vs non access

	Frequency	Percent	Valid Percent	Cumulative Percent
No	128	68.1	68.1	68.1
Yes	60	31.9	31.9	100.0
Total	188	100.0	100.0	

60 respondents (31.9%) were qualified and able to secure microfinance credit. Yet its only 27% who receive the same amount as they apply, other 4.9% have receive shortly to the amount requested. 125 respondents (66.5%) of all respondents have never applied for microfinance loan. Among 33% who apply for microfinance loan 60 respondents (31.9) were qualified and able to secure the loan and three respondents have applied but fail the application. And 74 (39.4) have neither apply for microfinance loan. 38(20.2%) received microfinance credit but fail to cover their financial cost. 22 (11.7/ have successful able to finance their farm expenditure through microfinance credit and 54(28.7%) never receive microfinance credit but still there were able to meet their farm expenses.

Figure 4.4 microfinance accessibility



Source: The Researcher

Table 4.5: The farmer who able to cover their financial cost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	78	41.0	41.2	41.2
	no	110	58.5	58.8	100.0
Total		188	100.0		

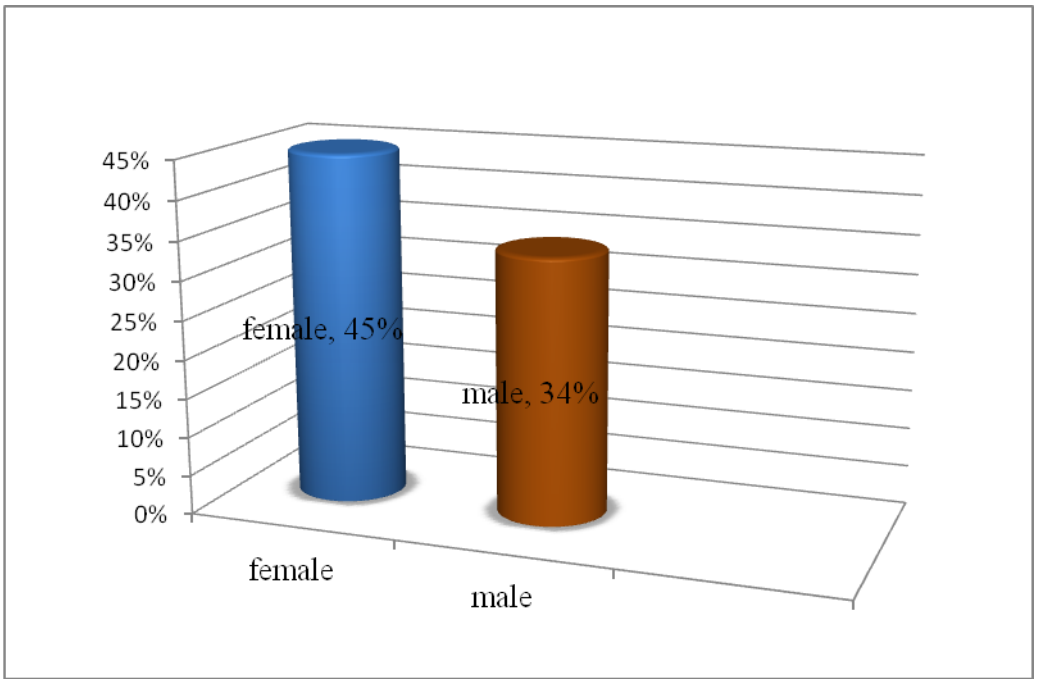
Table 4.4 above shows, the number of farmers who were able to cover their financial cost were 77, equal to 41% of the whole farmer. Other group of farmer were still suffering from financial shortage despite of existence of microfinance. The total numbers of farmers who are suffering from financial constraint are greater than those who are financial free.

4.5 The possibility of microfinance to fill the gap

4.5.1 Sex of the respondent

On regard to the sex of the respondent, 50 (45%) female respondents were able to fill their financial gap and 26 male (34%) were able to fill their financial gap. Female respondent have high chance of meeting their requirement, because have high access to financial support and credit than man. Women are more involved in the cooperation and union that help them qualify for loan. The credit provided by vikoba and pride are in most case provided to group member, which limit the male from securing the loan because most of the group formative are women.

Figure 4.5.1; Sex of the respondent

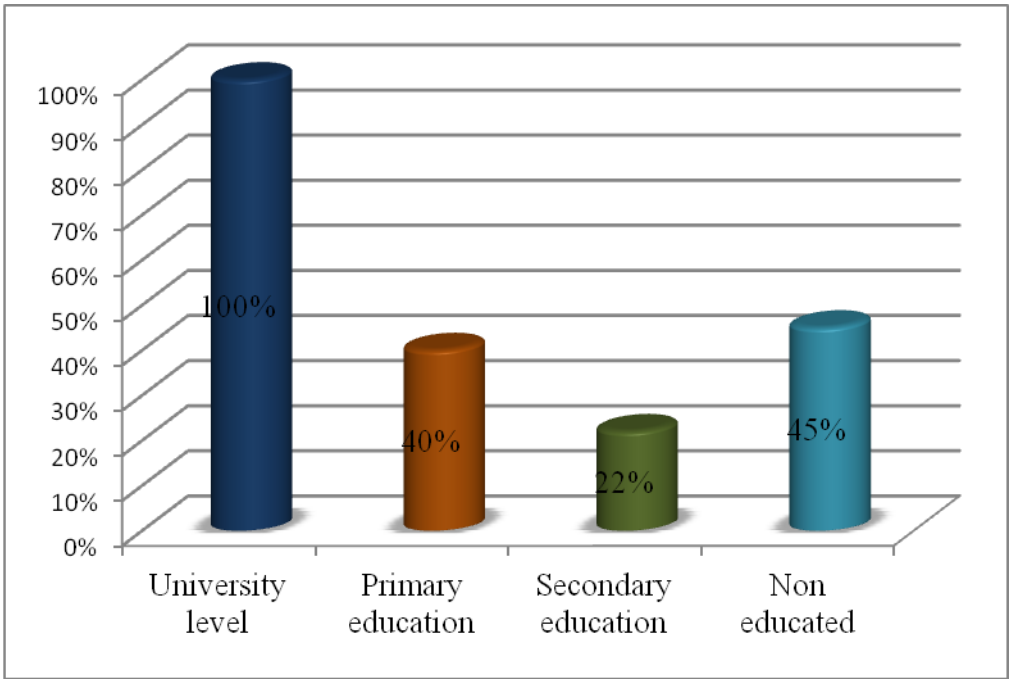


Source: The Researcher

4.5.2 Education level

The study found, 45% of non educated are able to meet their expenses, 22 % for secondary education, 40% primary education and 100 university levels. The figure 4.5.2 shows the highest group are those who reach university level (100%). But this is caused by sample population of farmers who reach the university level. There are only one respondent who reach the university level in the entire sample and he was able to meet his financial cost.

Figure 4.5.2: Education level



Source: The Researcher

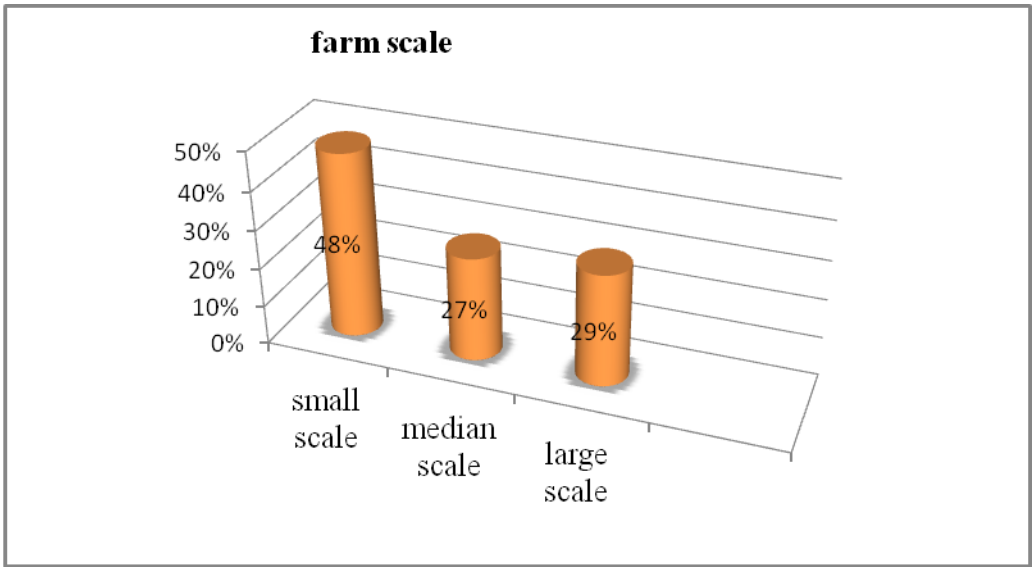
4.5.3. Scale of the farm

The results below reveal that small scale farmer have high possibility of financing their farm expenses, than the middle scale and large scale. 48% of the farmers who practice small scale farm were able to finance their farming activities, 27% of the middle scale farmers were able to finance their farming activities and 29% of the large scale farmers were able to finance their farming. Basing on the total number of farmer who fills their financial gap, 75% of them are practicing small scale farming, 20% are practicing middle scale farming and 5% for the large scale.

Surprising, large scale farmer were expected to have high financial income which will increase their possibility of filling their financial gap. Islam & Tenaw (2009) pointed that, farmers that are possessing small scale are the one who are suffering from the financial shortage than other scale and to a great extent their limited to microfinance credit as a result marginal and small farmers are frequently termed as “missing middle." The study show that large scale farm are the most vulnerable

group than the small scale farm, this maybe because lager scale farm demand high financial requirement and have high financial gap to be filled in, compare to small scale farm.

Figure 4.5.3: scale of the farm



Source: The Researcher

4.5.4. Microfinance awareness

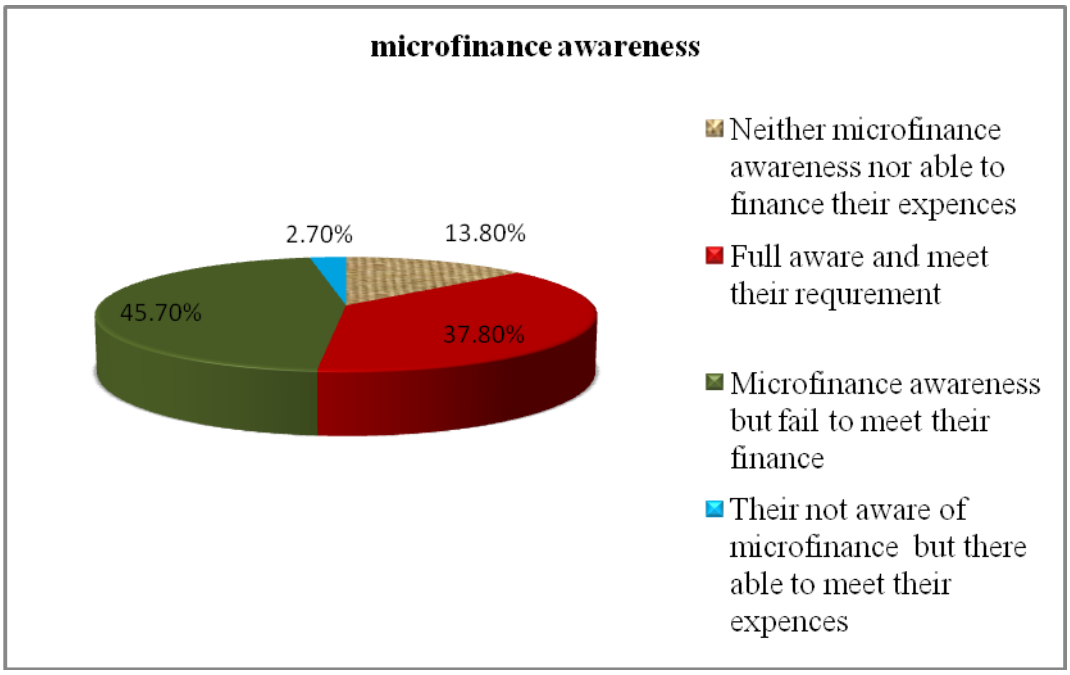
Table 4.5.4: Microfinance awareness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	157	83.5	83.5	83.5
	no	31	16.5	16.5	100.0
	Total	188	100.0	100.0	

Table 1 above show 157 farmers (83.5%) have knowledge about the existence and operation work of microfinance while 31(16.5%) are not aware of microfinance. Further in the graph below, the data show 26 respondents (13.8) are neither aware of microfinance and they were not able to meet their farm expenses. 71 (37.8%) are aware of microfinance and they cover their financial cost. 86(45.7%) are aware of

microfinance but fail to finance their farm expenditure and other 5(2.7%) are not aware of microfinance but still there were able to meet their farm expenses. The high group of the farmer are found to be full aware of microfinance access. Compared to those who are not aware of microfinance, microfinance awareness has high influence on filling gap. The percentage of those who are not aware and fill the gap is only 2.7

Figure 4.5.4: Microfinance awareness



Source: The Researcher

4.5.5 Government subsidy

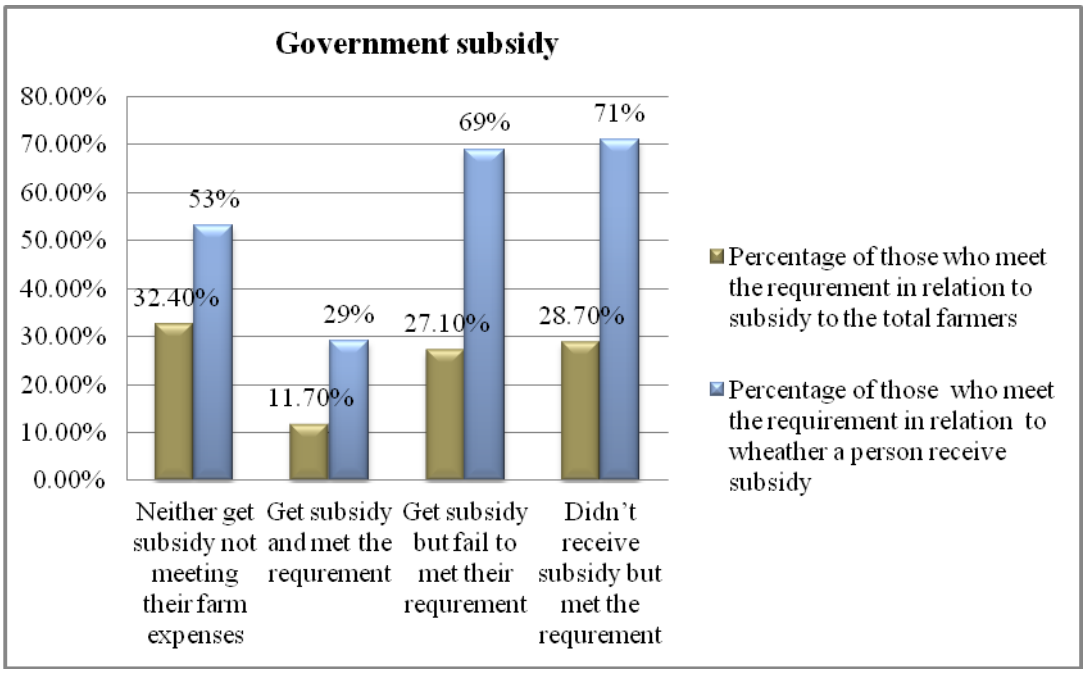
61 respondents (32.4%) have neither get the subsidy nor meet their farm requirement, 22(11.7%) have successfully achieve subsidy and they are able to cove their farming expenses. 27% get subsidy but fail to meet their expenses. And 28.7% did not receive the subsidy yet their able to finance their expenses.

The result shows that those who never receive subsidy have high percent of failure to meet their farming expenses. This is because those who did not receive subsidy are mostly the one who fail even to contribute the needed share of subsidy so as to get the input. Because the subsidies are given as inputs, were 40% of the input costs

needed to be contributed by the farmers. If the farmers fail to contribute for the manure it's obvious they have low income and is likely impossible for them to meet their farm requirement. The second group are those who never receive subsidy and yet they are able to finance their farming. And the lowest group is those who receive the subsidy and meet their farming expenses. The expectation was, those who receive the subsidy should have high chance of filling their financial gap yet those who never receive subsidy are more cited to be able to meet their finance. This is because those who did not receive subsidy have never applied for subsidy because their personal income can sustain their farming expenses. This effect has outlay the effective contribution of subsidy over the farmer, and appeared as those who receive subsidy are worse off, in sustaining their farm.

Figure below shows that 69% percent of those who get subsidy fail to meet the requirement. While its 53% of those who never get the subsidy fail to meet their finance. 29% of those who are able to meet their finance receive government subsidy while 71% are able to meet their finance yet they don't receive any government subsidy.

Figure 4.5.5: Government subsidy

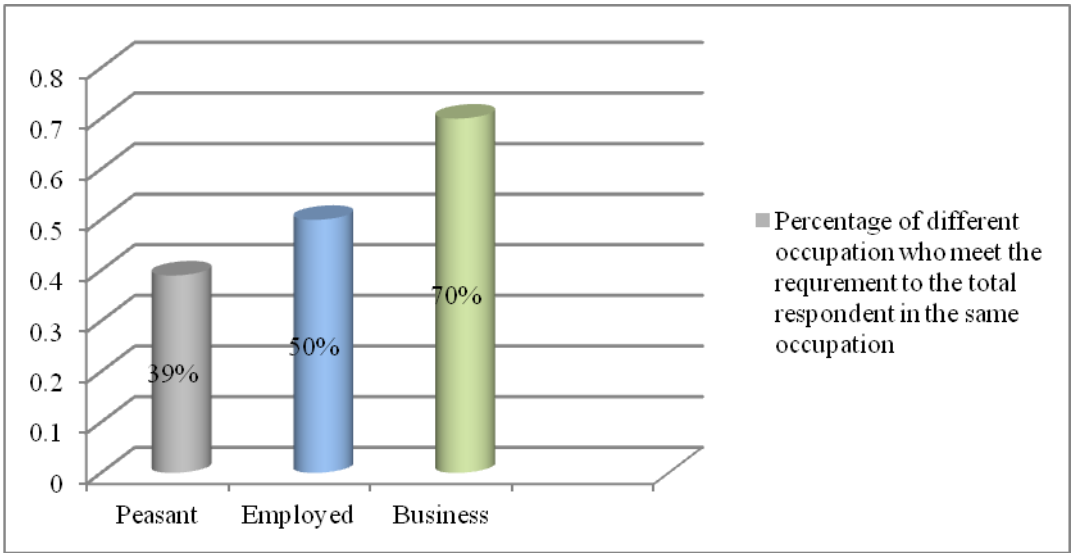


Source: The Researcher

4.5.6. Occupation status

Figure 4.5.6 below shows 39% of the whole peasants were able to meet their finance, 50% of the employed were able to meet their expenses and 70% of the businessmen were able to meet their farm expenses. The businessmen have high percentage of meeting their financial requirement, then employed person and lastly the peasant. The obvious factor may be because businessman, have more than one source to finance its farm expenditure, unlike peasant. Also the possibility of having access to microfinance is high since he/she can use his/her business as collateral.

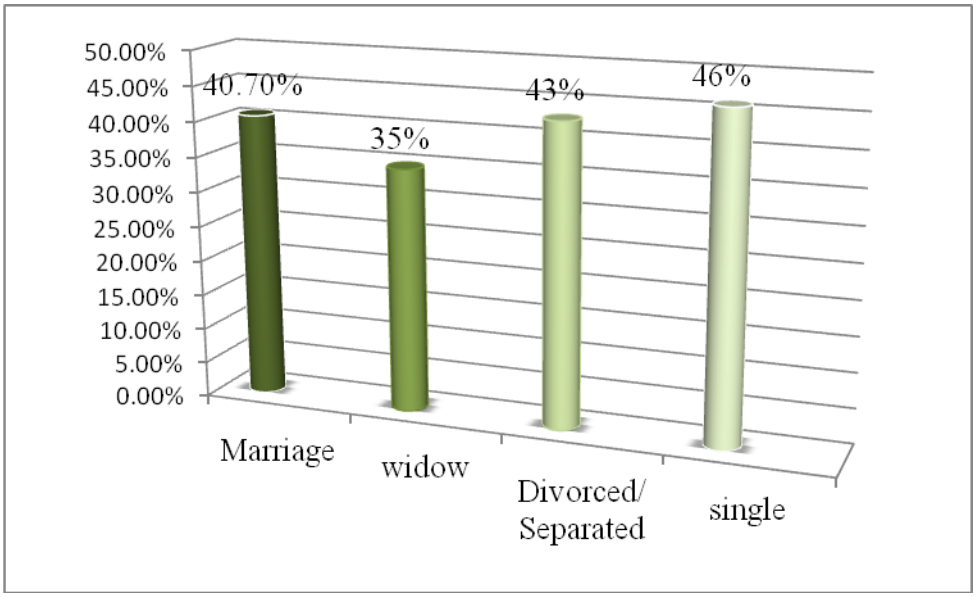
Figure 4.5.6: Occupation of the respondent



Source: The Researcher

4.5.7 Marital status

Figure 4.4.7 Marital status of the respondent



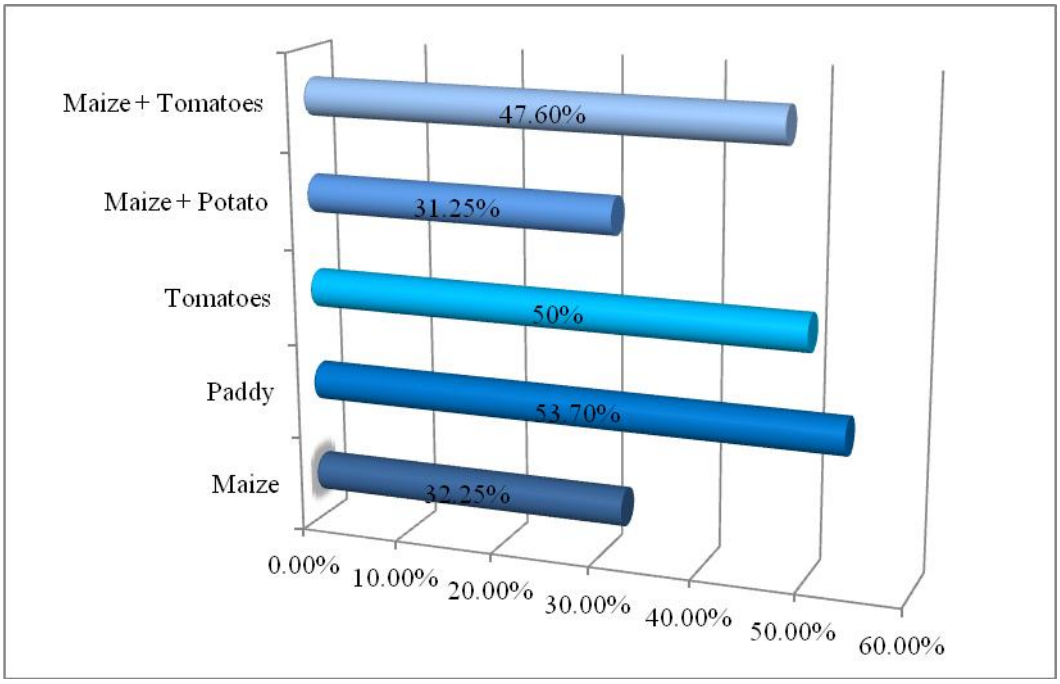
Source: The Researcher

The figure 4.4.7 show 40.70% of the marriage respondent were able to meet their financial cost, 35% of the widow were able to fill their financial gap, 43% of the divorced farm fill their gap and 46% of the those who are single are able to fill their financial gap. The groups of people who are single are highly counted as financial free when it comes to agriculture finance. This is contrary to the expectation, the marriage respondent were expected to have high influence on possibility of filling the financial gap than other group because the two can participate together to finance their farm expenses, compared to those who are single, divorced and widow. This is because single farmers have many responsibilities, more committed in their farming and very caution on how to use their money, so they save more for the next season.

4.5.8 Crop types

Farmers who grow up paddy have low financial requirement than the other crops, because paddy doesn't require artificial fertilizer and are not mostly exposed to pest. Corresponding to the finding 53% of those who practices paddy are able to fill their farm expenses.

Figure 4.5.8; types of crop farming

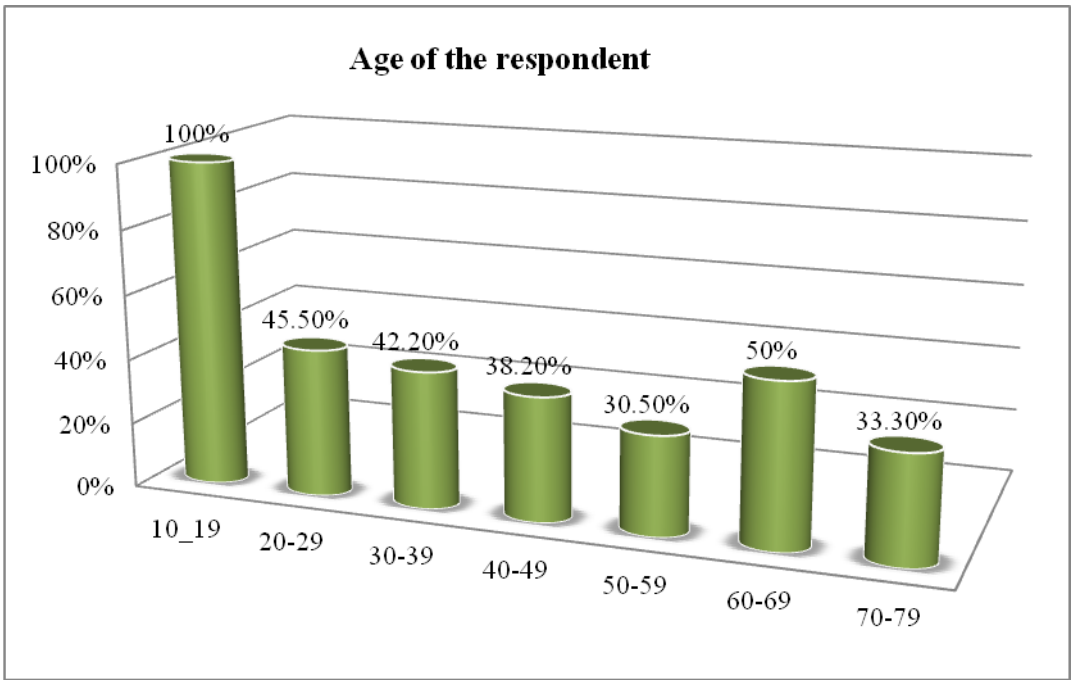


Source: The Researcher

The second largest group are those who practice tomatoes (50%), then maize and tomatoes (47.6%), maize alone (32.25%) followed by those who are farming maize and potatoes (31.25%). According to the field information, in responding to the question of how the farmers finance their agriculture undertaking, those who grow tomatoes have reported to be supported by the businessman. The businessman provide them loan to be paid after harvest with no interest rate but it given for the condition of selling the crops to them at prevailing price. Their reason for the support is because tomato is high marketable crops, so they transport to Dar es Salaam and export to Kenya, Mozambique, and Zambia and earn high profit. That is why tomato growers have high percent of meeting their requirement. Tomato crops is said to have high return, which also make the farmer who are growing tomato well off and have high income enough to save for the next season. The next group is those who practicing maize alone and the last group are those who practice maize and potatoes. Maize and potatoes have high financial costs which require high credit than maize alone.

4.5.9Age of the respondent

Figure 4.5.9 Age of the respondent



Source: The Researcher

The result show the smallest age group is 10-19, which have 100% of meeting their financial requirement, 20-29 (45.5%), 30-39 (42.20%), 40-49 (38.20%), 50-59 (30.50%), 60-69 (50%), 70-79 (33.3%). The group age of 10-19 have high percent of being able to fill the financial gap, because the population sample taken from this group is low. Its only one respondent aged between 10 to19. The next age group with high percentage of fills it financial gap is 60-69, which is also because there small number of sample aged in this group. Group 50-59 and 70-79 are the termed to have high financial constrain, because have low percentage compare to others. The strongest reason for this failure of financing their expenses is because the aged farmers are isolated from having microfinance credit. This was asserted by one woman from Ifunda who complain about being disqualified for loan just because she is old.

4.6.0. Statistical test result

Before running the regression analysis, statistical test was made to ensure, model were correctly specified, no linear relationship between variable, no Heteroscedasticity and no serial relation between variable. The results are explained hereunder:

4.6.1 Multicollinearity Heteroscedasticity and Autocorrelation

Multicollinearity; After performing multicollinearity test in the model the result show that variance inflation factor are below five for all variables except for the age groups. The highest VIF is 5.259 and tolerance is 0.19. According to O'Brien, 2007 'Tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 and above indicate a multicollinearity problem'

Therefore this results show there is a linear relationship between the variables. According to Gujarati 2007, multicollinearity can either removed by increasing the sample size, model transformation, remove the variable that cause linearity in the model or do nothing. In this research, the dummy age between 20-29 have been remove because there highly linear between the age dummies, and scale of the farm have been weighted for median and large scale because number of farmer who practise large and median scale were very small in the studied area.

After removing the dummy age variable all other variables found to have VIF below 5 and the lowest tolerance value is 0.212 which show there is no multicollinearity problem.

< Table 4.6 and 4.6.1 here >

4.6.2 Heteroscedasticity; Both visual inspection of plotted residual show that there constant variance between residuals. The conclusion was, in this model there is no heteroscedasticity problem.

< Table 4.6.2.1, 4.6.2.2 and 4.6.6.3 here >

4.6.3 Autocorrelation; Autocorrelation test was performed by using Durbin Watson test and the results reveal the DWT is 1.836 and for microfinance access model is 1.800 which are within the acceptable range.

< Table 4.6.3.here>

4.6.4 Goodness of fit of the model.

The pseudo r-square estimated is 0.1918 implying the estimated model explain the dependent model better than the model with no regressors by 19%. Also eleven (55%) independent variables are significance explaining the dependent variable.

After testing for multicollinearity, Heteroscedasticity, autocorrelation, goodness of fit of the model, and correcting multicollinearity problem, I conclude that the models were good for estimation of variable parameters.

4.7 Findings and discussion

4.7.1 Estimation result

Based on research model, the possibility of microfinance to fill agriculture financial gap, were primarily determined by the size of the farm, type of crop, access to subsidy, microfinance awareness, and household characteristics, such as, age of the respondent, sex, education level, marital status and occupation status. The result from regression analysis show that sex of the respondent, level of education, divorced and widow dummy and business occupation dummy are statistically insignificant even at 10%. Alternatively, the changes on coefficient ratio have no effect on the dependent variable. Age of the respondent, marriage dummy, scale of the farm, crop types, government subsidy and microfinance awareness found to be statistically significant. In other word they statistically influence the possibility of microfinance to fill the gap.

Age of the respondent

The age were defined in six group 10-19, 30-39, 40-49, 50-59, 50-69 and 70-79, whereby the age group of 10-19 was used as a reference category.

The age group of 30-39 dummy was statistically significance at 1% with the odds ratio of .3371783, showing the possibility of microfinance to fill the gap have favoured the reference category. The age group of 10-19 have 33% chance of filling agriculture financial gap than 30-39 ages group. This was influenced by the population sample of group 10-19. Going through the sample population is only one respondent who fall in the age group of 10-19 and she was able to meet its farm

expenditure. For this reason the regression result favour group 10-19 because all of the farmer in this group were able to fill the financial gap.

On regard to marital status the result shows the possibility of microfinance to fill the gap favoured marriage farmers over single. The odds ratio is .3422448, significance at 10% implying that the marriage farmers have high chance of filling the financial gap by 34% over single farmers. This is caused by the fact that marriage farmer can participate in farming activities and reduce the labour cost compared to single respondents. Also for marriage farmers, it easy to get enough income to finance their expenses because is the contribution from two people.

The occupation status was defined in three category, peasant, employed and businessman/businesswoman. Peasants were set as the benchmark category, therefore business and employed respondent were interpreted in term of peasant respondent. The result from the regression show, employed dummy is significant at 10% with the odds ratio of .0819645 showing those who engage on farming activities only have high chance of filling the gap by 8% than those who are employed and farming. This is contrary to the expectation, the employed farmer were expected to have high chance of filling their financial gap because they have high possibility of getting microfinance access. The major reason for this is due to the fact that, number of peasant respondent is large compared to employed respondent resulting into high number of farmers who were able to fill the financial gap.

The farm scale dummy shows, both median scale farm and large scale farm are significant at 1% with odds ratio of .3226078 and .197044 respectively. With both ratio less than 1, it means small scale farmer were favoured over median scale farmer and large scale farmer. Small scale farmer have 32% chance of filling the financial gap over median scale and 19% chance over large scale farmer respectively. This is contrary to the expectation, because large scale farm were expected to have high financial return and high income source to finance their farm expenses. Also they were expected to have high possibility of having financial access, because their big farm can be used as security. The major reason for this might be due to the fact that, as size of the farm increase the cost of finance increase, so as the financial gap. So it

becomes difficult for microfinance to fill the financial gap for those who practice median scale compare to small scale. This argument was also supported by (Hollinger 2004) who said "Dynamic and conflicting changes in agriculture finance appear to be operating as the financial requirements of agriculture increasing"

On regard to crops types, maize and paddy were significant at 1% with odds ratio of .1788425 and .1428928 respectively. Maize + potatoes and tomatoes are significant at 5% with odds ratio of .1428928 and .20338 respectively. In all of the four dummies the regression results is less than one, which implies the possibility of microfinance to fill the financial gap favour benchmark category. Those who grow maize + tomato have high chance of meeting their financial requirement compared to other crops. During data collection, potatoes growers were complaining that the cost of farming is too high as it takes about 45000 Tshs, to buy one bag of seed enough for one acre. Also I discover that most of the tomatoes growers have no problems in financing their farming, because they get financial support from the businessman. This financial support is given as loan to be paid after harvest with no interest rate but it given for the condition that the farmer has to sell their crops to them at prevailing price. Also the other main reason is because tomato has high return in term of profit, which makes the tomato grower well of, so the financial gap that is left to be filled by microfinance is very small.

The coefficient for government subsidy was -1.010098, significant at 1% with odd ratio of .3641831. The odds ratio is less than one implying that, the possibility of microfinance to fill the gap favoured those who did not receive government subsidy. Those who did not receiving government subsidy have 36% chance more of meeting their requirement than those who receive subsidy. This is because most of those who detached from subsidy are somehow well off and they can personally, meet their own financial requirement.

On regard to those who are aware of existence and operation of microfinance the estimation result shows, microfinance coefficient is -2.005529, with odds ratio of .1345891, significant at 1%. This means those who are aware to microfinance credit have high chance of filling their financial gap, rather than those who are not aware,

by 13%. As expected, microfinance awareness will increase access to microfinance and possibility of microfinance to fill the financial gap.

Farmer's accessibility to microfinance

The statistical result shows scale of the farm, education level and sex of the respondent are statistically insignificant to microfinance access. Occupation status, marital status and age of the respondent were found significant.

On regard to occupation status, employment was the benchmark category and the result for peasant farmers and businessman was regressed compared to employed farmers.

Odds ratio is .0506526 for the business dummy, significant at 5% and .0940901 for the peasant dummy was significance at 10%. This implies that employed farmers have high chance of getting loan access over businessman at 5% and have 9% more chance of getting loan access over peasant farmers. The major reason for this is due to the fact that, for employed person her/his employment can be used as security to get loan access. Also the assurance of being able to repay the loan is high, because he has more than one income source, that make him/her to be able to secure the loan even if it demand the repayment of the loan to be before harvest. Moreover, employed farmers can use salary income to pay for entrance fee so as to secure loans.

The age dummy result show odds ratio is .0909317 significant at 5%, implies the result favour 10-19 age over 20-29, same as the above 10-19 is favored by number of sample in the population from this age group. It is only one of the respondent who fall in this age group and she was able to secure the loan.

On regard to marital status, marriage farmers were favored over single respondent and widow respondent. Odds ratio for single dummy is .1059354 significant at 5% and for the widow dummy odds ratio is .1261368 significant at 1%.

This imply that marriage farmer have 10% chance of getting credit access over single farmers and 12% over the widow farmers. This is caused by the fact that, the

marriage can contribute together, and have high possibility of having high income compare to single and widow for payment of entrance fees.

4.7 How the provision of microfinance can fill the financial gap to the farmers.

Throughout the conduct of this research, the researcher has discovered that, microfinance loan does not meet the farmer's demands and expectations. The credit provided has proved to be charged high interest and in most cases is reported to be delayed. It does not help the low income earner, it help the middle and high income people because the low income lack collateral, and entrance fees. Moreover the repayment system is not working out for the farmer, for those who receive credit from SACCOs their suppose to pay in every month, and for pride is three month, which is still problem for them because most of the crops takes 4 -5 month from planting to harvest. Vikoba is the only institution which demands the repayment to be paid after harvest, yet for the farmer is not an optimal solution. The loan offered by this institution is not enough to meet the need of the farmers. Yet one respondent had these to say

" I will never take loan from microfinance, because even if they demand the repayment to be done after harvest, I will then be forced to sell my crops soon after harvest to be able to pay the loan, at the time everybody else is selling, the price goes down. The price is 35000 to 40000 for on bag of maize, while I can wait and sell two month after harvest for 60000-8000" Which is nearly twice of the former price.

This shows that the cost of using credit if far greater than the risk associate with it. The farmer will not only deal with the accrued interest rate but using of the loan has impact even on price.

Thus for these reasons almost 125 (66.5%) farmers never seek for microfinance credit. 33.5% of the respondents were applied but it's only 31.9% approved for a loan and yet it's only 27% of the whole farmer who get the same amount as they apply.

Therefore for microfinance to fill the gap the problem associate with credit provision should be eliminated.

First the interest rate should be reduced so as to lower credit cost and increase return to the farmer. In order to achieve this, the Government must control inflation rate of the country, it is typically known that developing country have low income yet charge high interest rate than developed country. So the government must deal with the source of high interest rate. To step in, inflation rate must be controlled, because interest rate is determined by current inflation plus expected inflation which are both high in developing countries. Also the government must improve infrastructure especially in the rural as investment incentive so as to increase the number of branch, and ultimately increase competition availability of loan and lowering of interest.

Microfinance provider should adjust the repayment of loan to be done after harvest, reduce the entrance fee, provide loan to individual person and not as group and provide the credit on time.

Also for microfinance to be able to fill the gap government must continue to provide subsidy to the farmer, in order to narrow the financial gap, and make sure the aim intended for that subsidy is achieved. Because subsidy does not help the low income earner, it helps the middle and high income people. The low income earners fail to contribute 40% of input cost to be able to secure subsidy. Thus for this reason almost 14% of the farmers do not receive the subsidy because they fail to contribute the amount set by the government. And 22.6% farmers fail to take the whole amount of subsidy and they only pay for only one bag of manure. Through carefully investigation, one of the respondents confirmed that,

Subsidy given by the government is not enough for all farmers and particularly to his farm, so he just found those who can't afford to pay for subsidy and ask them to give him their shares. This ascertains was confirmed by another respondent who said;

For most of us who can't afford to contribute for subsidy, we are given 5000 Tshs, to give up our subsidy share" one man from Ifunda.

CHAPTER FIVE
CONCLUSION AND POLICY IMPLICATION

5.0 Introduction

This chapter is the finalization of this dissertation, it provides for the summary of the study, Policy implications, Limitation of the study, area for further research and the general conclusion.

5.1 Summary of the Study

The study is based on exploring if microfinance can fill the existing financial gap to the farmer with respect to the scale of production, covering the broad frame of Iringa rural district in Tanzania. Incorporate with the general objective the study also explores the financial initiative introduced and examines the key success attained by microfinance.

Primary data source was employed to get the required information and logistic regression was used to analyze the underlying effect of sex, level of education, marital status, occupation status, scale of the farm, cop types, subsidy, and microfinance loan on covering the financial gap to the farmers.

The research revealed that farmers are highly depending on their personal source and they rather substitute for informal institution than using microfinance credit. 17% of the farmers depend on informal institution and those who depend on microfinance are only 9%. 53% of the farmers are benefited from government support while 47% of the respondents are financed through financial initiative initiated inform of microfinance. The supply of microfinance credit is very limited to the farmers and its only 27% of the respondent, who were able to receive the same amount as they apply. Further its only 41% of the whole farmer who were manage to finance their agriculture cost.

The result from the regression model show that sex of the respondent, level of education, divorced, widow dummy and business occupation dummy are statistically insignificant even at 10%.The age group of 30-39 dummy is significant at 1% with odds ratio of .3371783, showing the possibility of microfinance to fill the gap have

favoured the age group of 10-19 with 33%. The marriage farmers have high chance of filling the financial gap by 34% over single farmers, significant at 10%. Employed farmers have high possibility of filling their financial gap over business farmers and those who are dealing with farming activities only. Small scale farmer were found significant at 1% favored over both median and large scale. Government subsidies have negative impact on possibility of microfinance to fill the financial gap and finally microfinance awareness has positive influence on possibility of microfinance to fill the gap.

5.2 Conclusion

Regression result in line collaboration with descriptive result show that microfinance cannot fill the financial gap to the farmers; hence microfinance is not a noble substitute of filling financial gap in agriculture sector left by the government. However microfinance succeed to improve financial status of the farmer, and those who receive loan from microfinance have high chance of covering their financial gap. The farmers depend more on their personal income, followed by group of those who use informal financial institution.

5.3 Policy implication and recommendation

Addressing financial crisis to the farmers caused by withdraws of Government and its Parastatal from taking control of agriculture sector is one of the rationales for the formation of agriculture and livestock policy 1997. In combination to complementary action, microfinance policy introduced in 2001 guided by the vision of achieving widespread access to microfinance throughout the country, made possible by institution operation and commercial principles. The findings of the research will indicate the success or failure of the policy on regard to financial constrain to the farmer. The intended objective of the policy was compared to the findings of the research and the assessment of implementation framework was made.

The policy objectives which are related to financial support to the farmer are to provide support services to the agricultural sector and to promote access to credit, education and information.

But the findings prove that the policies fail to address the financial need to the farmers. Microfinance institutions have not succeeded to fill the financial gap to the farmer. Further, microfinance services is limited by unpredictable harvest, lack of security/collateral, high interest, entrance fee, unavailability of loan and loan repayment system.

Through agriculture policy, the researcher discover that the policy fail to meet its objective because of uncoordinated between plan and set of action. The objectives are well stated but there are no any set of activities to be performed to achieve this objective. And all through the policy, policy statement have stated without the action plan/instrument organized to achieve it

Example, Policy statement 'The Ministry will advocate and promote credit lines from commercial banks, financial institutions and rural savings and credit societies for traders, farmers and livestock keepers to finance, input supply". It just stated without any policy instrument and no indication of the progress.

So this research could be useful in policy review, for helping setting up the policy instrument regarding access to credit. Taking the farm suggestion could be a good help to ensure the fulfilments of the objective and the policy goal. Since implementation and monitoring of the implementation will be assured through proper set of instrument and activities.

Example for the case of lowering interest rate

Although government has decided that interest rate should privately determine by the institution itself. The government can.

- Use inflation control measure as instrument to lower interest rate, because interest rate is determined by current inflation and expected inflation.
- Building good infrastructure in the village to ensure, smooth running of financial services, this will increase availability of loan, competition and ultimately lower the interest rate.

In reviewing of microfinance policy: The government have emphasised on increase competition and number of microfinance institution in rural area, but institutions is free to develop their own micro- financing, based on their own internal objective and

they will not be required to support the sector. The numbers of microfinance branches have increased but they rarely finance agriculture because of risk and the time of repayment which is before crops harvest.

So the government should consider reviewing the policy, use regulatory measure to increase financing agriculture, or legally force microfinance to support the sector by certain percent.

5.4 Limitation of the study

The major limitation was the fact that, the respondent believed that, the questions were designed as a frame which the government will use to help them financing their farming activities. They believe speaking the truth may hinder the chances of getting financial help from the Government. This led most of the farmer overstate their financial needs and fail to acknowledge that microfinance can fill the financial gap. So the researcher has to specifically ask the farmer to state their financial cost and compare with the scale of the farm, then compared to the financial income stated by the farmers. The other limitation is unavailability of the current figure of the number of farmer's population for calculating the sample size of the study. Therefore the number of the total population used to calculate the sample is the total number of farmers in 2002 projected to 2012.

5.5 Areas for further research

Microfinance is associated with various problems, therefore, whether they can fill the financial gap or not is not the only concern, but also the effectiveness of the loan provided. Loan provided are associated with various problem. Even if it may fill the financial gap prevailing but it highly subjects the farmer in hostile condition. The cost associated with the loan is not just the interest rate and entrance fee, but also the cost of selling the product soon after harvest to be able to repay the loan. Farmers are forced to sell nearly half of what they can sell two month after harvest because of oversupply of crops. Therefore I suggest the study on effectiveness of microfinance loan to the farmer to be made.

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APPENDICES

APPENDIX 1

4.1 SAMPLE SIZE AND ITS CHARACTERISTICS

Table 4.1.1: Sex of the respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	75	39.9	39.9	39.9
	female	113	60.1	60.1	100.0
	Total	188	100.0	100.0	

Table 4.1.2 Age of the respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10-19	1	.5	.5	.5
	20-29	33	17.6	17.6	18.1
	30-39	64	34.0	34.0	52.1
	40-49	34	18.1	18.1	70.2
	50-59	36	19.1	19.1	89.4
	60-69	14	7.4	7.4	96.8
	70-79	6	3.2	3.2	100.0
	Total	188	100.0	100.0	

Table 4.1.3 Education of the respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	none educated	22	11.7	11.7	11.7
	primary education	156	83.0	83.0	94.7
	secondary education O level	9	4.8	4.8	99.5
	univesity	1	.5	.5	100.0
	Total	188	100.0	100.0	

Table 4.1.4 Marital status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	13	6.9	6.9	6.9
	married	145	77.1	77.1	84.0
	widow	23	12.2	12.2	96.3
	divoced/separeted	7	3.7	3.7	100.0
	Total	188	100.0	100.0	

Table 4.1.5 Occupation status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	peasant	174	92.6	92.6	92.6
	employed	4	2.1	2.1	94.7
	businessman	10	5.3	5.3	100.0
	Total	188	100.0	100.0	

Multicollinerity test result; model 1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Colinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.003	.253		.012	.991		
	30-39 vs 10-19	.164	.138	.196	1.192	.235	.190	5.259
	50-59 vs 10-19	.205	.131	.211	1.558	.121	.279	3.579
	40-49 vs 10-19	.176	.139	.176	1.270	.206	.266	3.758
	60-69 vs 10-19	-.249	.403	-.047	-.617	.538	.879	1.138
	70-79 vs 10-19	-.017	.181	-.009	-.094	.925	.569	1.759
	primary vs none educated	.123	.161	.119	.761	.448	.212	4.727
	secondary vs none educated	.178	.190	.139	.940	.349	.233	4.285
	university vs none educated	-.132	.389	-.039	-.339	.735	.380	2.629
	marriage vs single	-.001	.139	.000	-.009	.993	.823	1.215
	divorces/separated vs single	-.039	.184	-.015	-.211	.834	.953	1.049
	widow vs single	-.128	.114	-.101	-1.118	.265	.631	1.586
	peasant vs employed	-.169	.140	-.092	-1.209	.228	.893	1.119
	bussiness man vs employed	-.019	.317	-.007	-.059	.953	.321	3.115
	large vs median	.055	.097	.054	.563	.574	.551	1.814
	small vs median	.123	.070	.153	1.743	.083	.669	1.494
	maize vs maize +potatoes	.000	.100	.000	.002	.998	.327	3.055
	padds vs maize+ potatoes	-.206	.117	-.217	-1.756	.081	.336	2.974
	maize+tomatoes vs maize + potatoes	.059	.116	.053	.510	.611	.479	2.086
	tomatoes vs potatoes +maize	-.216	.252	-.071	-.857	.392	.759	1.317
	yes vs no	.019	.069	.023	.267	.790	.693	1.443
	male vs female	-.161	.075	-.201	-2.139	.034	.580	1.725
	20-29 vs 10-19	.164	.162	.133	1.011	.314	.299	3.349

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Colinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.003	.253		.012	.991		
	30-39 vs 10-19	.164	.138	.196	1.192	.235	.190	5.259
	50-59 vs 10-19	.205	.131	.211	1.558	.121	.279	3.579
	40-49 vs 10-19	.176	.139	.176	1.270	.206	.266	3.758
	60-69 vs 10-19	-.249	.403	-.047	-.617	.538	.879	1.138
	70-79 vs 10-19	-.017	.181	-.009	-.094	.925	.569	1.759
	primary vs none educated	.123	.161	.119	.761	.448	.212	4.727
	secondary vs none educated	.178	.190	.139	.940	.349	.233	4.285
	university vs none educated	-.132	.389	-.039	-.339	.735	.380	2.629
	marriage vs single	-.001	.139	.000	-.009	.993	.823	1.215
	divorces/separated vs single	-.039	.184	-.015	-.211	.834	.953	1.049
	widow vs single	-.128	.114	-.101	-1.118	.265	.631	1.586
	peasant vs employed	-.169	.140	-.092	-1.209	.228	.893	1.119
	bussiness man vs employed	-.019	.317	-.007	-.059	.953	.321	3.115
	large vs median	.055	.097	.054	.563	.574	.551	1.814
	small vs median	.123	.070	.153	1.743	.083	.669	1.494
	maize vs maize +potatoes	.000	.100	.000	.002	.998	.327	3.055
	padds vs maize+ potatoes	-.206	.117	-.217	-1.756	.081	.336	2.974
	maize+tomatoes vs maize + potatoes	.059	.116	.053	.510	.611	.479	2.086
	tomatoes vs potatoes +maize	-.216	.252	-.071	-.857	.392	.759	1.317
	yes vs no	.019	.069	.023	.267	.790	.693	1.443
	male vs female	-.161	.075	-.201	-2.139	.034	.580	1.725
	20-29 vs 10-19	.164	.162	.133	1.011	.314	.299	3.349

a. Dependent Variable: awareness vs not aware

Table 4.6.1: Multicollinearity result Coefficients[a,b] Mode 2

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.122	.223		.547	.585		
	30-39 vs 10-19	.058	.089	.069	.652	.515	.453	2.207
	59 vs 10-19	.114	.096	.117	1.189	.236	.529	1.889
	40-49 vs 10-19	.079	.100	.079	.791	.430	.510	1.959
	60-69 vs 10-19	-.344	.392	-.065	-.877	.382	.930	1.076
	70-79 vs 10-19	-.100	.161	-.053	-.624	.533	.718	1.392
	primary vs none educated	.114	.161	.110	.709	.480	.212	4.713
	secondary vs none educated	.153	.188	.120	.815	.416	.237	4.213
	university vs none educated	-.180	.386	-.054	-.465	.642	.386	2.590
	marriage vs single	.019	.137	.011	.137	.891	.840	1.191
	divorces/separated vs single	-.048	.184	-.019	-.260	.795	.956	1.046
	widow vs single	-.167	.107	-.132	-1.553	.122	.712	1.404
	peasant vs employed	-.150	.139	-.081	-1.083	.280	.910	1.099
	bussiness man vs employed	.011	.316	.004	.034	.973	.324	3.089
	large vs median	.051	.097	.051	.529	.597	.552	1.812
	small vs median	.114	.070	.142	1.634	.104	.679	1.472
	maize vs maize +potatoes	-.007	.100	-.008	-.068	.946	.329	3.040
	padds vs maize+ potatoes	-.189	.116	-.199	-1.629	.105	.343	2.914
	maize+tomatoes vs maize + potatoes	.064	.116	.057	.555	.579	.480	2.082
	tomatoes vs potatoes +maize	-.230	.251	-.075	-.917	.360	.762	1.313
	yes vs no	.023	.069	.029	.333	.740	.696	1.437
	male vs female	-.171	.075	-.214	-2.289	.023	.589	1.696

a. Dependent Variable: awareness vs not aware

b. Weighted Least Squares Regression - Weighted by new

Table 4.6.3: Model 1 Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.249[a]	.062	.057	.478	
2	.299[b]	.090	.080	.472	1.836

a. Predictors: (Constant), awareness vs not aware

b. Predictors: (Constant), awareness vs not aware, peasant vs employed

c. Dependent Variable: yes vs no

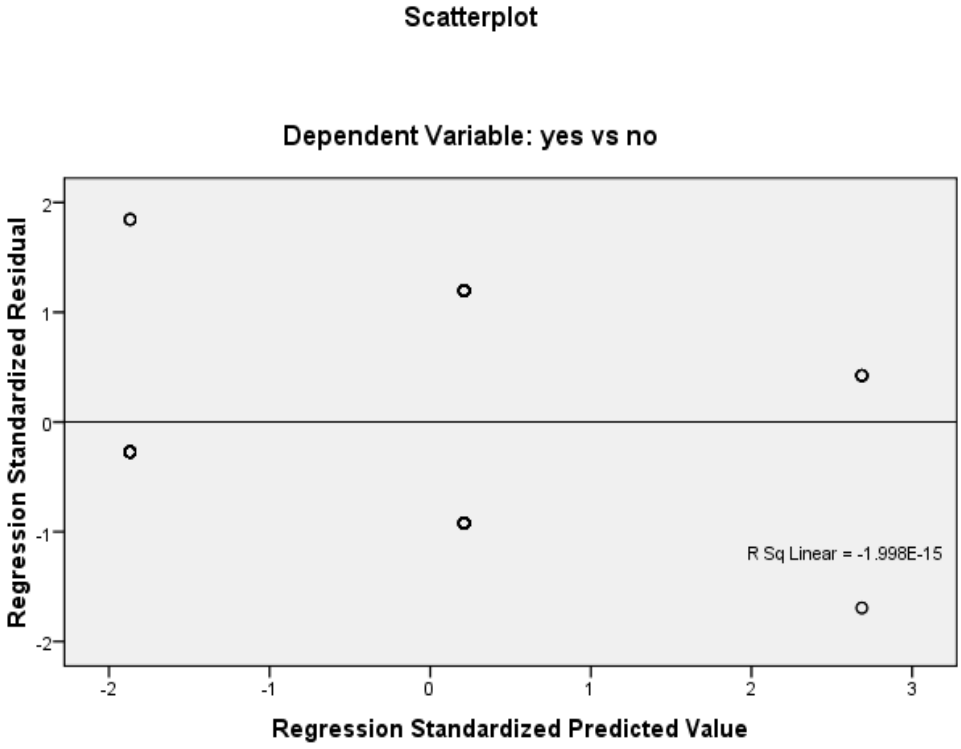
Model 2 Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.312[a]	.097	.007	.444	1.800

a. Predictors: (Constant), median vs small, 60-69 vs 10-19, bussiness man vs employed, divorces/separated vs single, 70-79 vs 10-19, peasant vs employed, 40-49 vs 10-19, male vs female, 50-59 vs 10-19, large vs small, primary vs none educated, 20-29 vs 10-19, university vs none educated, marriage vs single, secondary vs none educated, widow vs single, 30-39 vs 10-19

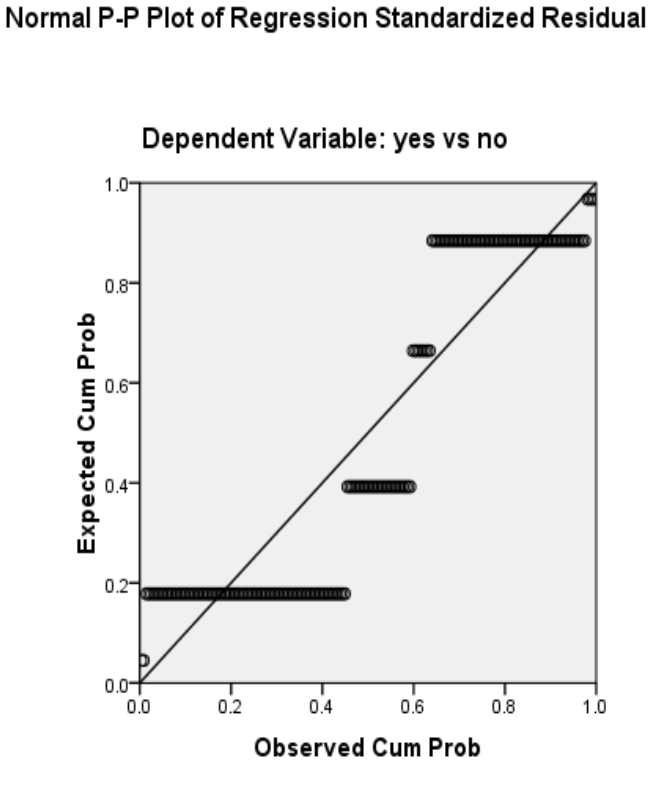
b. Dependent Variable: access vs non access

Figure 4.6.2.1: Heteroscedasticity test result



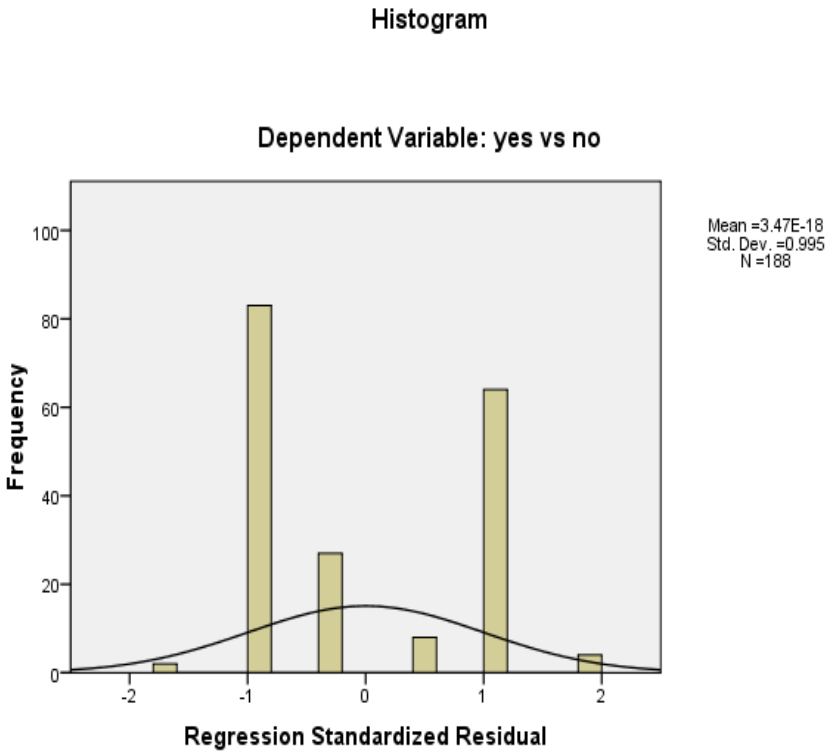
1

Figure 4.6.2.2: Heteroscedasticity test result for model



1

Figure 4.6.2.3: Heteroscedasticity test result



1

Heteroscedasticity test result for model 2

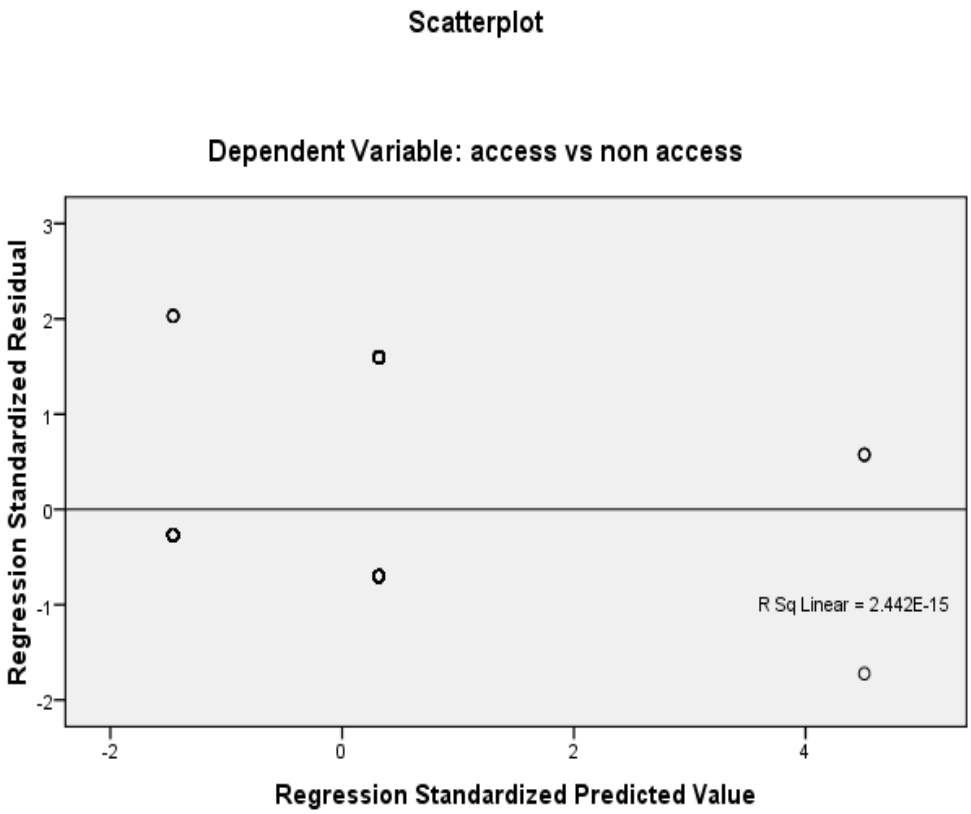


Table 4.7: Estimation model 1 result

Estimation coefficient and odds ratio

D1 requirement	coeff	odds ratio	z
Female sex [a]	.0723402	1.075021	0.20
D2age[b]	.0093394	1.009383	0.03
D3age [b]	-1.087143**	.3371783	-2.37
D4age [b]	-.3589669	.6983975	-0.87
D6age [b]	.0442461	1.04524	0.07
Primary education [c]	-.970471	.3789045	-1.33
None educated [c]	-.8049399	.4471148	-0.94
Single [d]	-1.072229*	.3422448	-1.78
Divorced [d]	-.8789187	.4152316	-1.08
Widow [d]	-.2809612	.7550576	-0.59
Businessman [e]	.6358444	1.888616	1.11
Employed [e]	-2.501469*	.0819645	-1.72
Large scale [f]	.197044***	.197044	-3.29
Median scale [f]	-1.131318 ***	.3226078	-3.51
Maize [g]	-1.72125***	.1788425	-3.77
Paddy [g]	-1.945661***	.1428928	-3.62
Maize+ tomatoes [g]	-1.592679***	.20338	-2.85
Tomatoes [g]	-2.318281**	.0984426	-2.16
Subsidy [h]	-1.010098***	.3641831	-3.04
Microfinance awareness [i]	-2.005529***	.1345891	-4.15

LR chi2(20)	=	83.40
Prob > chi2	=	0.0000
Pseudo R2	=	0.1918

Legend

***= significance at 1%, ** at 5% and * at 10%

a = dummy variable: male is a reference category.

b = dummy variable: 10-19 is a reference category

c = dummy variable: secondary education is a reference category

d = dummy variable: marriage is a reference category

e = dummy variable: peasant is a reference category

f = dummy variable: small scale is a reference category

g = dummy variable: maize + tomato is a reference category

h = dummy variable: no is a reference category

i = dummy variable: yes is a reference category

Table 4.7: Estimation model 2 result

Estimation odds ratio and z statistics

D1 requirement	odds ratio	z
Female sex [a]	.9665928	-0.11
D1age[b]	.0909317	-1.98
D2age [b]	.1814953	-1.49
D3age [b]	.355692	-0.91
D4age [b]	.1804089	-1.51
Primary education [c]	1.468978	0.76
None educated [c]	1.196912	0.23
Single [d]	.1059354	-2.03
Divorced [d]	.2275929	-1.35
Widow [d]	.1261368	-3.02
Businessman [e]	.0506526	-2.00
Employed [e]	.0940901	-1.73
Large scale [f]	1.019639	0.04
Median scale [f]	1.456473	1.15

LR chi2(20)	=	44.37
Prob > chi2	=	0.0002
Pseudo R2	=	0.1204

Legend

***= significance at 1%, ** at 5% and * at 10%

a = dummy variable: male is a reference category.

b = dummy variable: 10-19 is a reference category

c = dummy variable: secondary education is a reference category

d = dummy variable: marriage is a reference category

e = dummy variable: employed is a reference category

f = dummy variable: small scale is a reference category

QUESTIONNAIRE

TITTLE: Agriculture financing initiative in developing country: Can microfinance fill the gap?

FORE WORD

i) I guarantee the information is for academic use only, not commercial.

ii) The name will never be revealed in any of my study.

iii) The researcher asks for your cooperation for the success of this study.

iv) I assure I will share the result that I get with you in the end.

INSTRUCTIONS

1. There are two sections of answering questions
   i) Questions which require you to put tick [✓] to the box provided.
   ii) Question which required you to express yourself.
2. Please answer all questions as instructed.
3. All your answers are treated as confidential.

DATE _____

Household characteristics

1. SEX (i) Male ☐

ii) Female ☐

2. AGE (i) 20-29 ☐ (ii) 30-39 ☐

(iii) 40-49 ☐ (iv) 50-59 ☐

(v) 60-69 ☐ (vi) 70-79 ☐

3. Education level:

(a) None educated ☐ (b) Primary education ☐

(c) Secondary education O-level ☐ (d) secondary education A-level ☐

(e) Others (Diploma or Degree) ☐

4. Marital status:

(a) Single ☐ (b) Married ☐

(c) Widow/widower ☐ (d) Divorce/ Separated ☐

5. Occupation status

(a) Peasants ☐ (c) Employed ☐ (b) Businessmen ☐

(d) Unemployed ☐

Size of the farm

1) What type of scale are you farming?

i) Large scale. ☐

ii) Median scale ☐

iii) Large scale. ☐

Sources of agriculture finance

1. How do you finance, agriculture activities?

i)……..

ii)……..

iii)……

2. Do you know anything about microfinance? .

(i) Yes ☐

(ii) No. ☐

3. What are the financial initiatives, financing agriculture in your district?

1. .....
2. .....
3. .....
4. .....
5. .....

Can microfinance fill the gap?

1). Have you ever applied for credit from microfinance?

(i) Yes ☐
(ii) No ☐

If no, why? ……..

……..

If YES, did you receive the loan? .....

How much did you receive? .....

How much did you apply?.....

2) Is that all you need for financing your farming activities .....

…….. ……..

If no, what is your total financial requirement, required to finance agriculture activities…….....

……..

3) Have you ever get agriculture subsidy from Non government organization?

i) Yes
ii) no

How much…….

Is that all you need for agriculture financing……..

Financial constrains

1. What difficult are you facing in acquiring loan
i)……

ii)……
…

iii)……
…

2. What difficult are you facing in acquiring subsidy from non government organization

i)
…….
.

ii)……
…

How the provision of microfinance can fill the financial gap to the farmers.

1) What are you think the government should do to increase financial services to the farmer?

……
……
……

2) What do you think microfinance should do, to increase financial requirement to the farmer?
……
……
……
…….....

CURRICULUM VITAE

Personal particulars:

Name: Catherine Munuo

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Educational profile:

2011- 2013: Mzumbe University (Master of Science in economics in project planning and management)

2008- 2011: Bachelor of Arts (Hons) economics. University of Dodoma.

2006-2008: Advanced level: Dodoma Secondary School. Awarded Advanced Certificate of Secondary Education [ACSEE]

2002-2005: Ordinary level: Mwika High School. Moshi/Kilimanjaro. Awarded Ordinary Certificate of Secondary Education [OCSEE].

Computer skills

MS Word, Excel, access, STATA and spss

Awards

A certificate of participating a workshop on business planning and entrepreneur skills