UNIVERSITY FOR DEVELOPMENT STUDIES

THE EFFECTS OF PREDICTOR VARIABLES ON SAVINGS BEHAVIOUR OF RURAL SMALLHOLDER FARMERS IN KARAGA DISTRICT OF NORTHERN REGION

ABDUL YEZID BUKARI ADAMS

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BY

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THESIS SUBMITTED TO THE DEPARTMENT OF EXTENSION, GENDER STUDIES AND RURAL DEVELOPMENT, FACULTY OF AGRIBUSINESS AND COMMUNICATION SCIENCES, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE IN INNOVATION COMMUNICATION

JULY,2018

DECLARATION

Student

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere:

Candidate's Signature:……...…… Date:…….……

Name: ……...……...

Supervisors'

I hereby declare that the preparation and presentation of the dissertation/thesis was supervised in accordance with the guidelines on supervision of dissertation/thesis laid down by the University for Development Studies.

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Name: …….....

ABSTRACT

The study assessed the effects of predictor variables on savings behaviour of rural smallholder farmers in the Karaga district. This study employed the survey research design and used a multi-staged sampling technique to select 300 respondents. Spearman Correlation was used to establish the relationship between Peer Influence, Institutional Influence, Self-Control, Financial Literacy and Savings Behaviour. Probit Regression was also employed to estimate the influence of Peer Influence, Institutional Influence, Self-Control, Financial Literacy, Age, Gender, Marital Status, Level of Education, Income and Level of Dependency on the Savings Behaviour of smallholders in the Karaga District. The Results indicated that majority (33.70%) of respondents were in the active age group of 36-45 whiles 60% of the respondents were males. About 69.30% of the respondents were not educated. The findings of the study also revealed that 74.30% of the smallholders do save, whiles 52.33% of those who save preferred saving in the form of cash. Some smallholder farmers save in non-cash forms of which a large number (98.50%) saved in grains. Among the cash savers, 23.67% saved with Village Savings and Loans Association, 7 % keep cash at home and as little as 0.67% saves on telecommunication network mobile money. Safety and security were the main reasons for most of these choices. Again, in establishing a relationship between Peer Influence (PII), Institutional Influence (II), Self-Control (SC) and Financial Literacy (FL) and Savings Behaviour (SB), the Spearman Correlation revealed a positive one, with FL having the strongest relationship of (rho=.731) with SB whiles II has the least association of (rho=.421) with SB. The Binary Probit Regression also revealed sex, marital status, dependency ratio, income, peer influence, institutional influence, self-control and financial literacy as significant predictors of rural smallholder farmers' savings behaviour. However, age and level of education was found insignificant and for that matter do not influence savings behaviour as earlier predicted. The study therefore recommended widening up VSLA to include men, improving advocacy on financial literacy and sensitization of smallholder farmers on telecommunications networks mobile money services to improve smallholder farmers' savings behaviour.

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DEDICATION

This work is dedicated to my father, Hon. Adams Ebenezer Mahama of blessed memory.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The word "saving" contains broad-based meaning and numerous explanations. In economic contexts, saving is defined as the residual income after deducting current consumption over a certain period of time (Browning and Lusardi, 1996; Warneryd, 1999). Conversely, saving in psychological context is referred to the process of not spending money for current period in order to be used in future. Furthermore, savings according to Warneryd (1999) is investing, putting money in a bank account, speculating and paying off mortgages. Savings can also be viewed to go beyond disposable income less consumption to include acquisition of durable goods (Issahaku, 2011). Examples of durable goods are; furniture, decoration, textile and home accessories, appliances, computer, equipment among others. In other word, saving behaviour is the combination of perceptions of future needs, a saving decision and a saving action (Chai et., 2015).

In primitive agricultural economies, saving can be viewed as holding back the best of the crop harvest as seed for the next planting season. If the whole crops are consumed, the economy will deteriorate to hunting and gathering in the next season (Safo, 2015). Rural smallholder farmers are therefore likely to save in the form of holding back the best of the crop for onward sowing or hold it back for anticipated rise in price.

Smallholder farmers are defined in various ways depending on the context, country and even ecological zone. Often the term 'smallholder' is interchangeably used with 'small-

scale', 'resource poor' and sometimes 'peasant farmer'. In general terms smallholder only refers to their limited resource endowment relative to other farmers in the sector. Smallholder farmers are also defined as those farmers owning small-based plots of land on which they grow subsistence crops and one or two cash crops relying almost exclusively on family labor. About 60% of Ghanaian population lives in the rural areas. The dominant economic activity in Ghanaian rural areas is agriculture, employing about 90% of the rural folks (GSS, 2014) and Chamberlin (2007) also revealed that more than 70% of Ghanaian farms are 3 hectares or less.

The International Fund for Agriculture Development (IFAD), (2004) reported that over one billion farmers in the world lack access to basic financial services, thereby depriving them of the means to improve their income, sustenance and survive food insecurity and emergencies. It is further estimated that only five percent of farmers in Africa and about fifteen percent in Asia and Latin America have had access to formal credit due to lack of collateral.

Over the years, donor organizations, governments, Non-Governmental Organizations and development practitioners have decided to use microcredit as a tool for poverty alleviation in developing countries. The focus of almost all interventions and initiatives towards poverty alleviation has been on the provision of credit and loans to people. Governments have often believed that the best way to help the rural poor is to provide them with external financing at subsidized interest rates so that smallholder farmers may be able to acquire modern farming inputs, utilize the associated improved methods, increase production, and

raise their incomes and eventually the quality of their lives (Jocelyn Alma A. Rodriguez and Richard L. Meyer, 1988). Meanwhile, loans and credit over the years have not proven to be serving its purpose of alleviating poverty (Jocelyn Alma A. Rodriguez and Richard L. Meyer, 1988). This is evident since the days of the usurious money lender to this era of competitive lending.

However, savings which seems to have the potential of alleviating poverty, is often relegated. The growth rate in the farming economy largely depends on the stock of capital built by a farmer and the re-investment of such stock for further improvement of the farming households (Nwibo, 2013). The story would therefore be different if some of the focus on credit and loans is shifted to savings. This is the only way people can feel the significance of deferred expenditure in the wake of their anticipated needs. It is from savings that business capital is accumulated leading to investments. Ultimately its savings that takes care of the future and so to some extend can be seen to guaranteeing a sustainable livelihood to the smallholder farmer. The economy of Northern Ghana is agrarian in nature, of which Karaga District is no exception. The smallholder farmers therefore also fall within the contention espoused by Haruna (2011), that there has been contending issues regarding whether farming households can save or not. On this premise, two conflicting views have been aired, thus the traditional or old view and the new view. The traditional view posited that farming households cannot save because they have low productivity as they are confined to the traditional methods of farming. In furtherance, Adams and VonPischke (2008) also argued that rural households are too poor to save and even if they get some additional income through some windfall, they spend it on consumption or on ceremonies.

In contrary to this traditional postulations, the new view argue that rural households have the capacity and the desire to save and would respond appropriately to saving opportunities and incentives. The proponents of the new view cited a number of reasons to expect substantial saving in rural areas. Putting the traditional view into perspective, would it then suffice to say saving is meant for only the rich or one must have more than enough before you can save.

According to Adams and VonPischke (2008), if rural smallholder farmers would still spend windfall on consumption and ceremonies then the argument is likely to go beyond having enough money to including other factors which these two standpoints haven't revealed. If saving behaviour is the combination of perceptions of future needs, a saving decision and a saving action. It is incumbent upon us to find out these factors that influences a person's posture towards savings, how the posture informs his/her preference for savings, most likely forms of savings, uses of savings among others.

1.2 Research Problem

Savings are potential tools for cushioning lives against shocks, stress and fight against poverty. Savings play a vital role in capital accumulation for investment at both micro and macro levels (Sutton and Jenkins, 2007; Jacqueline, 2010). According to United Nations Organization (2000), capital accumulation is a major requirement of economic development and if the volume of savings was inadequate to meet investment requirements, major bottlenecks were likely to develop in the process of capital formation and the drive for development.

Meanwhile, Gross Domestic Savings as a percentage of GDP in Ghana had been very low in many other African countries, between 1980 and 2001, averaging 6.4% in Ghana, 37.4% in Botswana, 21.4% in Cameroon, 21.6% in Nigeria, 13.9% in Kenya and 7.3% in Malawi (World Bank, 2003). The apparent low saving rate in Ghana has been due to a combination of micro and macroeconomic as well as political factors.

In order to overcome the problem of low savings in Ghana, various monetary and fiscal policies have been pursued over the years, but these have not yielded the required results (Quartey, 2002; Ziorklui and Barbie, 2003). In recognition of the benefits of savings, governments since 1990's have enacted laws and policies to help boost savings among people, yet the rate of saving among people remains low especially smallholder farmers, (Quartey and Blankson, 2008). According to Andani (2017), only 15% of the Ghanaian population saves. Ma-zu (2015) also confirmed that Savings, a necessary engine of economic growth, has been very low in Ghana and this has the potential to reduce investment thereby increasing poverty levels in the economy of which the agricultural sector is not immune.

In an attempt to unearth the mysteries surrounding low saving behaviour among people, several studies have been conducted by researchers such as Lahiri (1989); Kibet *et al.* (2009); Akpan *et al.* (2011); Swasdpeera and Pandey (2012) on the factors that predict saving behaviour of people. Findings from these study identify factors such as; level of education, family size, membership of social group, income, occupation, gender and age of household head, marital status, financial literacy, access to financial services,

dependency ratio, high costs of transport and low variety of savings products to have an influence on savings behaviour.

However, there seem to be a lack of consensus on which factors influence the saving behaviour of people (Kibet, 2009), especially the smallholder farmer. Hence, this study seeks to investigate the predictors of savings behaviour of smallholder farmers in the Karaga District of the Northern Region**.**

1.3 Main Research Question

What are the effects of predictor variables on saving behaviour among rural smallholder farmers in the Karaga District of Northern region?

1.3.1 Specific Research Questions

The specific questions are:

1. What is the savings behaviour of rural smallholder farmers in Karaga district?
2. How can peer and institutional influence affect savings behaviour of rural smallholder farmers in Karaga district.
3. What is the relationship between self-control and savings behaviour of rural smallholder farmers in Karaga district?
4. What is the influence of financial literacy on savings behaviour of rural smallholder farmers in Karaga district?
5. What is the influence of demographic and socio-economic factors on savings behaviour of rural smallholder farmers' in Karaga district?

1.4 Objectives of the Study

1.4.1 Main Objective

The main objective seeks to determine the effects of predictor variables on savings behaviour among rural smallholder farmers in Karaga district of Northern region.

1.4.2 Specific Objectives

The specific objectives are to:

1. Describe the savings behaviour of rural smallholder farmers in Karaga district.

2. Determine how peer and institutional influence affect savings behaviour of rural smallholder farmers in Karaga district.

3. Estimate the relationship between self-control and savings behaviour of rural smallholder farmers in Karaga district

4. Determine the influence of financial literacy on savings behaviour of rural smallholder farmers in Karaga district.

5. Investigate the influence of demographic and socio-economic factors on savings behaviour of rural smallholder farmers' in Karaga district.

1.5 Justification of the Study

Ghana's greatest opportunity to industrialize and also to create new jobs lies in agriculture. Agriculture is the backbone of Ghana's economy and the mainstay for the large majority of the population. It directly employs 60% of the total labor force and provides the main source of income for 90% of the population (GSS, 2014).

Smallholder farmers are Ghana and Africa's main line of defense in ensuring food security (Safo, 2015). There is therefore the need to study their saving behaviour, factors that influence savings behaviour, forms in which they save and the uses savings. The research is therefore intended to provide in-depth knowledge to policy makers as well as development planners for consideration in development planning and institution of policy intervention.

This study will give support to policy makers to devise appropriate strategies to tap the potentials of the savings in the rural communities. Whiles an addition to existing literature, it will also be a resource to development agents and partners who are aimed at poverty alleviation in the rural areas.

1.6 Definition of Key Concepts

1.6.1 Savings

Saving can be referred to as the process of not spending money for current period in order to be used in future, the acquisition of grains or livestock for future need and holding back the best of the crop harvest as seed crops for the next planting season (Safo, 2015). Rural smallholder farmers therefore are likely to be saving in the form of holding back the best of the crop for onward sowing or hold it back for anticipated rice in price.

1.6.2 Savings Behaviour

Savings behaviour is the combination of expectations of future need, choice by an individual to save or consume earlier in life, and the forms to save (Chai *et al.*, 2015).

1.6.3 Peer Influence

Social pressure by members of one's peer group to take a certain action, adopt certain values or otherwise conform in other to be accepted Ajzen (1991). In the case of these smallholder farmers peer influence goes beyond colleagues to include stakeholder institutions they have contact or dealings with.

1.6.4 Institutional Influence

It advances five institutional constructs as being instrumental in predicting individual saving and asset accumulation, particularly among low-income households: 1) access, 2) information, 3) incentives, 4) facilitation, and 5) expectations (Sherraden, 1991; Beverly and Sherraden, 1999; Sherraden, 1999; Sherraden *et al.*, 2003).

1.6.5 Self Control

Self-control is the aptitude to identify and control one's emotions and desires. This is characterized by the exertion of will power, self-discipline and ability to delay gratification (Baumeister, 2002).

1.6.6 Financial Literacy

A definition that properly covers this idea is proposed by the OECD, where financial literacy is regarded as a combination of awareness, knowledge, skill, attitude, and behaviour needed to make sound financial decisions and ultimately achieve individual financial well-being (OECD, 2013).

1.6.7 Smallholder farmer

Smallholder farmers are defined in various ways depending on the context, country and even ecological zone. Often the term 'smallholder' is interchangeably used with 'small-

scale', 'resource poor' and sometimes 'peasant farmer'. In general terms smallholder only refers to their limited resource endowment relative to other farmers in the sector. Smallholder farmers are also defined as those farmers owning small-based plots of land on which they grow subsistence crops relying almost exclusively on family labor.

1.7 Organization of the Study

The thesis is organized into five chapters. Chapter one is the introduction of the study. It focuses on the background of the study, problem statement of the research, objectives and questions of the study, the relevance of the study, and definitions of key terms used for the study.

Chapter two reviews literature relevant to the topic to establish a theoretical approach for the research and provides enough evidence for analytical discussion to support the study.

Chapter three focuses on the research methodology, including description of study area, instrument used to collect needed information for this study, research design, sampling procedure and methods of data collection analysis.

Chapter four presents result and discussions of findings of the research within the context of the study objectives. It discussed findings on the savings behaviour of smallholder farmers, demographic and socio-economic factors influencing savings behaviour and the influence of social variables such as peer influence, institutional influence, self-control and financial literacy on saving behaviour whiles chapter five focuses on the summary, conclusion, implications and recommendations based on the findings of the research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviewed various definitions of savings, forms of savings, savings theories, independent variables like peer influence, institutional influence, self-control, financial literacy, demographic and socio-economic variable (age, sex, marital status, dependency, level of education and income) and dependent variable savings behaviour.

2.1 Theory of Planned Behaviour

Theory of Planned Behaviour (TPB) is applied in this research as proposed by Icek Ajzen in 1991. Theory of Planned Behaviour is an extension of the Theory of Reasoned Action which was mutually propounded by Ajzen and Fishbein (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). This theory seeks to explain the reasons behind the performance of certain actions. Fygenson (2006) used the theory in information system research and other researchers such as Pellino (1997), Cook et., al (2002) and Wiethoff (2004) also used the theory of planned behaviour to research health, economic and human resource sectors respectively.

According to Ajzen (1991), people perform certain behaviour because they form an intention to do so. In TPB the three concepts that determine the intention are attitude towards the behaviour, subjective norm and perceived behavioural control. First, attitude towards the behaviour refers to the degree to which a person forms a positive or negative evaluation towards the behaviour. Meanwhile, subjective norm refers to the perceived social pressure to perform or not to perform the behaviour. The social pressure is emanating

from significant others such as parents, spouse, peers and colleagues. The third determinant of intention is perceived behavioural control which refers to people's perception of their ability to perform a given behaviour. This means that a person's intention to carry out certain actions is predicted by the perceived simplicity or difficulty of performing the behaviour and it is assumed to reflect past experience as well as anticipated impediment.

As a general rule, favourable attitude and subjective norm and greater perceived behavioural control can lead to a stronger intention to perform specific behaviour. In this study, attitude towards behaviour and perceived behavioural control are used to explain how financial literacy predicts smallholder farmers' saving behaviour. Typically, smallholder farmers with greater financial knowledge will perceive the benefits of saving and problems encountered if savings is not maintained. Hence this behavioural belief will drive the smallholder farmers to form a positive attitude towards saving behaviour. Meanwhile, smallholder farmers are intended to save if they possess better cognitive ability pertaining to financial management as they believe they can save appropriately. Furthermore, perceived behavioural control can be used to explain self-control as smallholder farmers with high level of self-control will perceive saving as easy, because they have the ability to regulate their desires, self-disciplined and delay gratification. Meanwhile, subjective norm is applied in explaining how peer and institutional pressure affect the smallholder farmers saving behaviour. Social pressures are normally created by peer and institutions; therefore, their behaviours are deemed to significantly affect smallholder farmers' intention to save.

In conclusion, all the social determinants (peer influence, institutional influence, self-control and financial literacy) can be well explained by the concepts of TPB in predicting the saving behaviour of smallholder farmers.

2.2 Savings

Savings is an accumulation of anything of lasting value. The general intention of savings is to guard against emergencies in future. The portion of income that is not spent is the part that is saved. In the voice of Henderson and Poole (1991), savings becomes a residual of income minus consumption or expenditure. Miller and Van Hoose (2001) also defined saving as forgone consumption. Interestingly, Samuelson and Samuelson (1980) said that, in the industrial society, savings is generally done differently by different people and for varying reasons. These scholars share the view that for instance when farmers keep part of their harvest for future consumption or planting, it becomes their savings. They have delayed current consumption for future consumption. Thus savings is primarily done by all groups of people; by families, individual households, organizations, pension funds etc.

However, Ahmed (2002) also put it in a simple language as putting money aside for future use. He shows that saving is the outcome of careful management of income and expenditure, so that there is something left to be put away for future use.

In Issahaku's (2011) analysis of the determinants of saving and investment in Nadowli district in the Upper West region, he regarded savings as income that is not consumed by immediately buying goods and services. Using a microeconomic approach, he saw a close relationship between savings and investment. Thus "by not using income to buy consumer

goods and service, it is most likely for a resource to be instead invested by being used to produce tangible and intangible capital such as machinery, schooling, on-the-job training, among others. Saving undeniably therefore is a strategic variable in the theory of economic growth hence its role as a determinant.

2.3 Theories of Savings

Many disciplines, scholars and researchers have tried to define savings behaviour from different perspective and thoughts. For instance, whilst economists like Modigliani and Ando, (1957) explain savings from income and age perspective, sociologist like Sorensen, (2000) also see class and social stratification as the primary influence of savings. On the other hand, Katona (1975) a behavioural economists and economic psychologists also see self-control, motives and other individual characteristics as the factors that influence savings. This section seeks to explain some of these theories as they form the basis underlying the study, especially when all of these differing opinions are influences by the professional backgrounds of the scholars.

2.3.1 Life Cycle Hypothesis

One of the most important economic theories regarding saving is the life cycle hypothesis proposed by Modigliani and Brumberg (1954). The essential idea behind the life-cycle hypothesis is that individuals (or households) try to keep their expenditures constant over the life-cycle. At times in life when income is lower than expected average life-cycle earnings, money would be borrowed; when income is higher than expected, the surplus would be saved.

By doing this, consumption is smoothed at a certain (own standard of living) level. Base on the life cycle hypothesis, old people should spend more than they do and young people should borrow since average life-cycle earnings will be lower (Ottoo, 2009).

According to the theory of life cycle (Ando and Modigliani, 1963), the financial behaviour for the youth and the elderly differ, as compared to the mature. The young people are an important source of the diminishing savings rate, especially those of them less than the employment age. Since their parents apportion a chunk of their incomes to supporting their children. In the same vein, the increase in the average life span imposes the increase of the saving rate during the active life with the view to maintaining the level of consumption (living standard) during the active life. Thus, the increase in the weight of the elderly in a population is equivalent to diminishing the population savings, since this segment is dissaving or is saving at a very reduced pace.

The purpose of the elderly segment is very important from the point of view of its financial behaviour, this being a category that don't save, thus consumes from the savings accumulated during the active life (Artus, 2002).

Wagner *et al.* (2005) explained that even though "the life cycle hypothesis (LCH) assumes that consumption and savings patterns represent an individual's age or stage within the life cycle, with a majority of saving occurring in the middle years but recent LCH models suggest significant heterogeneity within and across age cohorts". To them low-income households do not exhibit savings behaviour predicted in original LCH models. From the Psychological point of view in their behavioural life-cycle hypothesis, Thaler and Shefrin

(1981) well-thought-out psychological factors such as mental accounting and self-control. According to this model, people do not treat all of their wealth in the same way, but spend differently depending on whether the money is seen as current income, current assets or future assets. Regarding self-control, Thaler and Shefrin (1981) stated that, people often adopt rules that restrict opportunities to spend. These rules can be imposed from the outside, or self-imposed. The expectation is that youthful and aged smallholder farmers in Karaga district would be engaged in minimal savings due to the nature of their reduced income.

2.3.2 Friedman Theory of Permanent Income

Friedman's (1957) permanent income hypothesis is an extension of the life cycle hypothesis. It is also based on the perception of one's present and future income. When income is higher than the permanent income somebody considers to be his or her comfortable (and realistic) level of income, money is saved for a period in life where income might be below this personal permanent income level. Friedman (1957) created a distinction between permanent income and transitory income. He said that transitory income is the difference between actually received income and permanent income. In his statement he showed that the higher the transitory income the higher the saving rates among the mortals. According to Friedman, people also save because of a bequest motive; the motivation behind saving is to leave an inheritance (Ottoo, 2009). According to Schenk (1988) the central idea of the permanent-income hypothesis, proposed by Milton Friedman in (1957), is simple: "people base consumption on what they consider to be their 'normal' income.

In doing this, they attempt to maintain a fairly constant standard of living even though their incomes may vary considerably from month to month or from year to year. As a result, increases and decreases in income that people see as temporary have little effect on their consumption spending". Thus, consumption depends on what people expect to earn over a considerable period of time. As in the life-cycle hypothesis, people smooth out fluctuations in income so that they save during periods of unusually high income and don't save during periods of unusually low income.

Schenk (1988) believes that both the permanent-income and life-cycle hypotheses loosen the relationship between consumption and income so that an exogenous change in investment may not have a constant multiplier effect. This is obviously seen in the permanent-income hypothesis, which suggests that people will try to decide whether or not a change of income is temporary. If they decide that it is, it has a small effect on their spending. Only when they become convinced that it is permanent will consumption change by a sizable amount.

In analyzing the differences between the two theories, Schenk (1988) noted that the life-cycle hypothesis introduced assets into the consumption function, and thereby give a role to the stock market. A rise in stock prices increases wealth and thus should increase consumption while a fall should reduce consumption. Hence, financial markets matter for consumption as well as for investment. The permanent-income hypothesis on the other hand introduces lags into the consumption function. An increase in income should not

immediately increase consumption spending by very much, but with time it should have a greater effect.

Behaviour that introduces a lag into the connection between income and consumption will generate the sort of energy that business-cycle theories saw. A change in spending changes income, but people only slowly adjust to it. As they do, their extra spending changes income further. An initial increase in spending tends to have effects that take a long time to completely unfold. The existence of lags also makes government attempts to control the economy more difficult. A change of policy does not have its full effect immediately, but only gradually. By the time it has its full effect, the problem that it was designed to attack may have disappeared. Finally, though the life-cycle and permanent-income hypotheses have greatly increased our understanding of consumption behaviour even though data from the economy does not always fit theory as well as it should, which means they do not provide a complete explanation for consumption behaviour (Schenk, 1988). So in effect, smallholder farmers in the Karaga district who have defined permanent incomes are expected to save if their incomes go beyond their permanent incomes at any point in time. However, in their current state, it will be difficult for them to distinguish between permanent income and temporary income because most, if not all the smallholder farmers are not salary earners.

2.3.3 Shortfall of the Life cycle and Permanent Income Theories

Niculescu-Aron and Mihăescu (2012) in their review of these two theories identified the following shortfalls: One of the shortfalls is the fact that these studies either focus on a single country or a group of countries without comparing the developed with the

developing ones. This leads to the conclusion that the samples used are inappropriate for highlighting differences between countries at different development stages. Since developed and developing countries have different characteristics, it will be unfair to ignore the differences in such a study. Another drawback is the fact that national aggregate data was used, which implies the assumption that the most important part of savings comes from the private savings account.

Thus, the discrepancy between countries appear due to the fact that the calculation method is different and also the use of aggregate data in such analyses is relevant only if private and public savings are substitutable but in this instance, they are actually not. Also, another disadvantage posed by the life-cycle theory is that persons are considered fully rational, acting only in their own interest and being able to know the exact date of retirement, death, as well as other important facts. They acknowledged that although there is unanimity regarding the importance of the explanatory variables such as income and wealth for estimating household savings, other more contentious factors like demographics, inflation and rates of return need to be included in the analysis in order to be able to better and more accurately project differences between saving behaviour of households for different countries. However, Deaton (1992) was consisted with the life cycle hypothesis when investigations revealed that older people save or at least do not spend as much of their savings as predicted by the life cycle hypothesis.

2.3.4 Keynes Absolute Income Hypothesis

Keynes (1936), in his theory, postulated that aggregate consumption is a function of aggregate current disposal income. The relation between consumption and income is based

on his fundamental psychological law of consumption which states that when income increases consumption expenditure also increases but by a smaller amount. The theory therefore examines the relationship between income and consumption, and asserts that the consumption level of a household depends on its absolute level (current level) of income. As income rises, the theory asserts, consumption will also rise but not necessarily at the same rate or magnitude. The idea is that saving is only possible, if someone has more than enough to meet the basic needs. This means that savings is only possible after one has met and paid for all essentials of life and there is still a remainder. It's the remainder that is going to be saved (Ottoo, 2009). Based on this theory, smallholder farmers who have satisfied their essential needs are better positioned to save whereas those who are challenged in terms of meeting their needs are not expected to save. It was recognized by J.M. Keynes (1936). It is also referred to as the Keynesian consumption function. In defining this concept, he read, individuals save out of their current income to smooth the expected use of goods and services over time.

Thus, he links consumption (C) to income (y) levels. So according to Keynes, the Keynesian consumption function is written in linear pattern as: CT = a + bYt. The coefficient, b, which Keynes called the marginal propensity to consume (MPC) and which was defined as $\partial C/\partial Y$, where, dC=Change in consumption and dY=Change in income. The saving function can be mapped in a general pattern as: S = f (Y) where: S is saved, why income is (national or disposable), and f is the notation for a generic, unspecified functional form. The actual functional form of the equation can be analogue, with a constant slope, or curvilinear, with a changing slope. The most usual pattern is linear, such as: S = c + day

were: S is saved, why income is, c is the intercept, and d is the gradient. It is frequently useful to express the saving function using parameters for the expenditure function.

C = a + b Y

Where: C is consumption expenditures, why again is income, a is the intercept, and b is the gradient. In this case, the saving function can be specified as:

S = -a + (1-b) Y

Where S is savings and Y is income Where: S is saving and Y is income. Yet, straight off the intercept is -a rather than c and the slope is (1-b) rather than d. This alternative specification shows the association between the saving role and the expenditure function. The intercept of the saving function (-a) is the negative of the intercept of the consumption function (a). The gradient of the saving function (1-b) is one minus the gradient of the consumption function (b), meaning that the meat of the marginal propensity to consume (b) and the marginal propensity to save (1-b) is equal to one, which means that a lot of additional income is used up and the rest is kept open. In a closed economic system, according to Keynes, MPS + MPC =1 since an increase in one unit of income will be either eaten or made unnecessary. Both the average and marginal propensities are generally considered to be between zero and one.

2.3.5 Relative Income Hypothesis

One of the earliest attempts to reconcile these conflicting pieces of evidence about the consumption-income relationship was the *relative-income hypothesis*, described by James Duesenberry (1949). It maintains that a household's consumption depends not exclusively on its current disposable income, but also on current income relative to past stages and comparative to the income of other households. So it means that individual's attitude to

consumption and saving is dictated more by his income in relation to others than by abstract standard of living.

According to Parker (2010), the relative-income model was formulated in two variants: a cross-section version and a time-series version. In both variants, consumption depends on current income *relative* to selected income standards that the household sets based on its own past income or on the income of other households around it.

He argued that a household's consumption would depend not just on its own current level of income, but on its income relative to those in the subgroup of the population with which it identifies itself. The household will attempt to align its consumption expenditures with those of other members of its group. Thus, households with lower income within the group will consume a larger share of their income to "keep up," while households with high incomes relative to the group will save more and consume less. In the cross-section version, Duesenberry (1949) appealed to the idea of "keeping up with the Joneses." According to the model, at any point in time the propensity to save by an individual can be seen as a rising function of his percentile position in the income distribution. A fraction of an individual's income devoted to consumption depends on the degree of his or her income relative to the incomes of the neighbors.

Also, it hypothesizes that the present consumption is not influenced simply by present levels of absolute and relative income, but also by levels of consumption attained in previous period. The theory also assumes that an individual's consumption behaviour will be determined by his/her habitual use of income.

The time-series variant of the relative-income hypothesis is very similar to the cross-section version. But the difference is that instead of comparing their income to those of other households, each household is assumed to consider its current income relative to its own past income levels. A household that has in the past achieved income levels higher than its present levels would attempt to maintain the high consumption levels that it achieved earlier. Thus, when incomes fall, consumption would not fall in proportion.

If an individual has already gained a certain standard of living and his/her real disposable income goes down under his/her previous peak income, he/she will not dilute the current use of goods and services, but rather will spend more from the disposable income to the extent of de-saving, in an endeavor to recover his previous consumption level. On the other hand, if his/her income raised higher than his/ her peak income, the hypothesis assumes that he/she will not aspire to a higher standard of living than the one already attained thereby raising the saving ration.

It is therefore challenging for a family to reduce a level of consumption once attained. The aggregate ratio of consumption to income is assumed to depend on the level of present income relative to past topmost income (Dusenberry, 1949).

2.3.6 Katona's Theory of Savings

According to Ottoo (2009) "Katona's theory of saving is based on the assumption that saving/ consumption is dependent on the ability to save/ consume and the willingness to save/ consume. The theory stressed the importance of income but thought of the absolute income hypothesis as being too naive. Simply having money left over after expenditures

on necessities does not mean that this money has been saved or will be saved. So the theory stresses that there is no justification to show that the remainder after expenditure on necessities is or will be automatically saved. To predict saving, the willingness to save needs to be considered as well. In other words, those who are able to save still need to choose to do so, that is, they have to make a decision that requires some degree of willpower. Consumer expectations and consumer sentiment will impact on saving decisions as well as pessimism and optimism with regard to a general and one's personal evaluation of the economic situation. While people save for different reasons, Katona assumes that someone's personal evaluation of the economic situation will influence contractual as well as discretionary saving decisions".

2.4 Forms of Savings

A person's decision as to where and how to save in order to derive maximum satisfaction as well as ensure the security of their income, is a very critical personal decision. Generally speaking, there are two main forms in which people can keep their savings. These are financial and non-financial forms (Ahmed, 2002; Aryeetey and Gockel, 1998; Boateng, 1994). Financial institutions include commercial and rural banks whiles the non-financial includes credit unions, microfinances companies and Susu groups (Boateng, 1994). Non-financial savings involves putting money into buying assets with hopes of earning additional revenue. In recent times, the most popular form of non-financial savings or investment is real estate (Kodom, 2013). However, for the local people, this takes the form of investing in livestock, cars/vehicle/tricycles, corn mills (for commercial purposes), land etc.

In the Nadowli district in the Upper West region of Ghana, Issahaku (2011) found that saving is normally held in financial form by a household which is contrary to the view that, rural households mainly hold the bulk of saving in the form of physical assets. They use their savings to make investment in the form of non-financial assets such as farmland, grinding mill, livestock, crops, poultry, houses, and other consumer durables. This pattern of saving can also be regarded as an investment due to the tendency of the value of the item to increase in the future. For example, in Ghana, many families and individuals buy pieces of solid ground and other landed property to re-sell them in the future at a higher cost.

2.4.1 Formal Savings Institutions

Formal savings occur when individuals or families keep or set aside money or monetary resources with formal financial institutions and non-financial institutions. The financial savings involve putting money in the form of shares, bonds, savings/current accounts and mutual funds.

2.4.2 Commercial Banks

Commercial banks are the most predominant and complex institutions among all formal financial intermediaries. According to Henderson and Poole (1991), a commercial bank is any financial firm or division of a larger firm that accepts deposits subject to withdrawal by checks on demand and invests those depositors' funds in interest bearing loans as well as marketable investments. The importance of commercial banks as a formal savings outlet for families cannot be underestimated. Lloyd (1999) remarked that interest in commercial banks as an outlet for savings grew among families not only because they take on a dominant role among financial intermediaries, but also because they sustain the ability to influence the money supply process. The natural processes of commercial banks also

constitute the main channel through which central bank's monetary policies influence a nation 's money supply and credit conditions to families and souls (Sylvester, 2011).

In Ghana, most high-return projects that promote economic development require a long-run commitment of capital, and this responsibility lies with commercial banks to drive deposits and savings in other for this to be achieved. Commercial banks mobilize funds from risk-averse savers to risk taking investors (Ngula, 2012).

According to Sylvester (2011), banks in Ghana undertake a mixture of short and long-term investments, commercial banks by accepting deposits provide safe keeping place for their customers' money and at the same time mobilize savings for development. The deposit is made up of three forms; demand, savings and time deposits. Through these savings, the banks mobilize idle resources and channel them into productive sectors for higher production and economic development. One of the main forms of deposit kept by commercial banks is savings account. This type of account is operated with the use of passbook. Deposits and withdrawals are recorded in this passbook by the bank. The account attracts interest for their customers but if withdrawals are more than twice in a month, it may not attract interest.

Ngula, (2012) stated that in Ghana commercial banks also encourage saving through their periodic promotions, where customers are rewarded for their activities with their respective banks over a defined period. Though, customers win cash prizes and home appliances, the ultimate aim of commercial banks is to use these incentives to drive savings and deposits for onward investments.

2.4.3 Non-Bank Financial Institutions

A new banking law (1993) that made the non-bank financial institutions (NBFIs) was promulgated. According to Section 27 of the NBFIs decree, a non-bank financial institution is an institution which carries on the business of, or part of, the business of taking of deposits, financing of any activity by way of making loans or advances or otherwise, which is not regulated by the securities industry law, dealing in shares, stocks, bonds, debenture or securities issued by the government or a company or other marketable securities, leasing, letting, or delivering of goods to hirer under a hire purchase agreement; carrying on duties related to insurance and insurance itself.

By this definition, a non – bank financial institution is a very broad concept comprising of discount houses, leasing and hire purchase companies, mortgage finance companies, savings and loan companies, building societies, insurance companies and credit unions among others.

2.4.4 Credit Unions

According to Clayton and Brown, (1983), credit union is a non-bank depository institution that is organized by people who share a mutual bond, such as employees of a fellowship, religious groups or labor unions with the primary purpose of helping members procure such items as cars, home appliances and sometimes meet emergencies Credit unions are usually owned and overseen by the members. It is an avenue where families can deposit their savings. Boateng (1994) also discovered that credit unions accept deposits and get loans only to its members. Membership of credit unions are commonly limited and confined to a particular group.

A number of credit unions have introduced initiatives aimed at facilitating regular saving by adults. These include payroll deduction schemes where, with an employer's agreement, members can set up an instruction for a specified amount from their salary to be paid directly into their credit union account. This is particularly useful for people who want to discipline themselves to save regularly. Over time, the individual will become used to not having access to the money that is automatically saved, making this a painless and rewarding way to save. Other options designed to provide a convenient way for members to save include standing orders, which allow money to be transferred from a bank account to a credit union account, electronic transfers, and lodgments by cheque or postal order.

Building up the member's savings record is an integral part of the credit union service. Collard *et al.* (2001) highlight the need for individuals on low income to be able to save very small amounts. Credit unions are sympathetic to such cases and are willing to accept very small savings without causing embarrassment to the member.

In Ghana, co-operative credit unions/ CFI's engage in the activities that involve deposit taking, provision of credits and other financial services to their members constitutes regulated activity under Act 774. Except where expressly exempted in writing by the Bank of Ghana, Co-operative Credit Unions/CFI's undertaking such activity are required to be registered and incorporated under sections 5 and 6 of the Co-operative Societies Act, 1968 (N.L.C.D. 252) and shall obtain a license issued by the Bank of Ghana before commencing or continuing such activities (Bank of Ghana, 2017). As a result of their adherence to these principles, credit unions are held in a position of high trust and esteem by their members. Other studies indicate a strong belief in the integrity of credit unions (Amárach Research,

2009). Furthermore, unlike commercial financial institutions, the range of services offered by credit unions is far less complex, more transparent and, in general, easier to understand than the more segmented, targeted services offered by banks. Credit unions in Ireland concentrate on generic, simplified savings and loan products.

2.4.5 Informal Savings Institutions

Informal savings are any savings that happen inside the informal sector of the economic system. Informal financial sector participates in all commercial savings and lending that take position outside the formal sector in the Ghanaian economy (Aryeetey and Gockel, 1998). Informal saving options available to Ghanaian families include, “susu”, “walking the banks”, and welfare societies as well as saving the money at home or with a trusted member of the residential district.

2.4.6 Susu

According to Boateng (1994), Susu is applicable to a group of people with a collective interest, for example friends, co-workers, traders in the same area or neighbors who agree to make contributions periodically and the total amount is paid to one of the members at a time until every member receives his or her number within a complete cycle. Susu enables individuals and households to be able to take items which they might have caused difficulty in building personal savings towards.

According to Aryeetey and Gockel (1991), susu is a saving mobilizing system (mobile banking) that traces its route from migrant traders from Nigeria. There are two main types of susu, thus individual Susu collectors and large Susu organization. For simplicity, the Susu collectors is used to refer to the two since their operation procedure is the same. With

the operation of Susu, collectors (known as Susu collectors, who are mostly males) move from client to client in shops, work places, market stalls as well as homes, at specific times of each day purposely to collect money towards a savings plan. Usually, clients agree and determine the exact amount to save every day for a period of time (in most cases a month). At the end of each month (or the 30 days), the accumulated savings are returned to the clients with no interest; instead, one day's deposit, which serves as a commission to the Susu collector, is deducted from the deposit (Aryeetey and Steel, 1995).

Savers are issued record books by the susu collector in other for the savers to keep record of their daily savings. Once the first day's deposit is made, the first number in the box is signed, this is repeated until all the 30 deposits are made in which case a cycle is completed. The collector spends a few minutes with the client in taking the deposit (this could be as little as 1 minute); the time spent involves receiving the day’s deposit and signing the next number on the card in the presence of the client. This practice of mobile banking is reported to operate in both rural and urban areas and even among office workers. Many collectors (especially older people) do it on part time basis, while many of the younger generation have, in recent years, engaged Susu collecting as a full time business (Aryeetey and Gockel, 1991; Aryeetey and Steel, 1995; Andah, 2005).

Even though they play an important role in savings mobilization, the Susu collectors are not regulated by any authorized body, yet people continue to save with them. In an effort to counter the negative image of the Susu industry and to generally lift standards, some of the Susu collectors in 1994 came together to form the Ghana Cooperative Susu Collectors

Association (GCSCA), because of strict eligibility requirements, a high percentage of Susu collectors do not belong to this association (GCSCA, 2007; Andah, 2005). The association has designed codes of practices to standardize or streamline operational procedures and system of identification for its members. These include wearing of uniforms for identification, the establishment of apprenticeship arrangement for new Susu collectors under an experienced collector, and training in simple book-keeping practices. The Susu system is very popular in both rural and urban areas in mobilizing savings, though stronger in the cities, particularly among the informal sector in Ghana (Aryeetey and Gockel, 1991).

In the aforementioned study, they found that about 77 percent of the respondents operated a saving account with a Susu collector (and 20 percent operated two Susu accounts), while only 36.4 percent possessed a formal bank account. On the average, only 18.3 percent of total savings were at the bank, 18.2 percent at home, and over 50 percent with Susu collectors. Aryeetey and Steel (1995) documents the savings mobilization of Susu collectors which had been corroborated by Andah (2005). However, in this massive savings mobilization from poor people, the transaction cost to the collectors is insignificant compared to the commission they receive. From the discussions, we see that informal savings practices are prevalent among low income people. The operation of the susu model therefore ensures and improves transparency.

2.4.7 Keeping Cash at Home

These savings are usually kept in the home, under a mattress, in a pot, or on a shelf where they are vulnerable to theft, temptation, family members, or “greedy neighbors placing claims on surpluses” (Morduch 2007, 163). Two couples reported having saved under

cushions in the past, but that the money was usually "withdrawn" before it could be used for its intended purpose (Morduch, 2007).

Saving money at home is also one of the prevalent ways in which families and individuals save money. This way of saving is usually the choice of people in the rural communities and suburbs where access to other financial intermediaries is almost a nightmare. It is as well the choice for people who do not trust banks and other financial institutions (Ahmed, 2002).

For people who have their reservations about the operations of formal financial intermediary institutions usually keep cash at home most of the times, rural families find it more convenient to deal with the informal financial intermediaries as the formal financial intermediaries are in most cases not available in the rural regions of Ghana.

2.4.8 Welfare Society

This is formed in most communities and workplaces with the purpose of helping each other in times of penury. Members contribute dues of fixed amounts and an elected treasurer keeps these amounts. Although members do not receive direct admission to their savings, the money is available for members to settle on as loans in times of need, sometime without any involvement or if any at all, very minimal (Ahmed, 2002).

2.4.9 ROSCA/ASCA

The most popular savings tool for the informal sector and poor households are the savings clubs popularly known as ROSCAs. There seem to be an argument over the origin of ROSCA/ASCA, Whilst Geertz (1962) traces the roots of ROSCAs from the 'commercially developed regions of West Africa' during the slave trade era into the Caribbean and the southern areas of the United States, Ardener (1964) argues that available information indicates ROSCAs operated in Japan as far back as the thirtieth century (1275 AD). Handa and Kirton (1999) claim that ROSCAs also known in Jamaica as the 'Jamaican Partner', is a saving and credit mechanism with roots in the slave past brought to the island by African slaves which they originally used as a device to purchase their freedom.

Poole and Grant (2003) mentioned that slaves from West Africa, during the slave trade era, operated a type of financial saving known as Susu, which is a form of ROSCA. The formal label 'Rotating Credit Association' was first coined by Geertz (1962) who indicated that earlier writers have used different terms such as contribution clubs, slates, mutual lending societies, pooling clubs, thrift groups, and friendly societies, in reference to rotating credit association, though they all mean the same principle. Actually Bouman (1979) expanded the description to 'Rotational Savings and Credit Association' (ROSCA), which refers to the same concept and it is this label that has gained popularity in the literature on microfinance (Poole and Grant, 2003).

ROSCAs are made up of a group of participants who decide to contribute a fixed sum of money on a weekly or monthly base into a common fund. At the end of the week (or month as the case may be), the saved money (commonly known as the 'pot') is given to a member of the group. The 'pot' then rotates until every member receives his/her turn of the 'windfall'. Then, the group either disbands or the cycle begins again. The order of rotation is normally decided through a ballot also known as random allocation of the fund, or by a bidding (auction) procedure (Besley *et al.*, 1994).

In a bidding ROSCA, members bid for the funds during a meeting, and the highest bidder wins the 'pot'. Unlike in a random ROSCA, winners receive the total sum of the 'pot' less the amount bid (see Calomiris and Rajaraman, 1998 for calculations on bidding ROSCA). Winners are excluded from the next bidding. The popularity of ROSCAs is such that, though microfinance clients pay group dues and in many cases save (voluntary saving), many of the participants would still partake in a ROSCA outside the scheme. ROSCA is the most dominant form of informal financial institution in most developing countries (Besley *et al.*, 1993; Anderson and Baland, 2002). It is known as Susu in Ghana, esusu in Nigeria and Liberia, osusu in the Gambia, asusu in Sierra Leone, and ndjonu in Benin (Miracle *et al.*, 1980; Steel *et al.*, 1997); arisan in Indonesia (Geertz, 1962), yao hui in China (Fei, 1943); and the tontine in Cameroon and Senegal, ekubs in Ethiopia, huis in Vietnam, and keh (or keye) in Korea (Bouman, 1995).

However, a major trait in all the associations despite their geographical location is its composition; it is similar since the members who form the association are from the same locality. These variants of ROSCAs, irrespective of where they operate provide a type of informal financial service to its members; and draw people to participate. Contrary to

popular perception, the practicing of ROSCA is not only limited to low income workers or those without financial access, World Bank, and the IMF workers, staff of commercial banks and the central bank of Indonesia do practice ROSCA (Poole and Grant, 2003).

In addition, Besley *et al.* (1993) argued that America's formal Savings and Loans sector grew out of ROSCAs. Different characteristics of ROSCAs in countries and across countries are well documented in van den Brink and Chavas (1997), Geertz (1962), Bascom (1952), Gamble (1944) and Fei (1943) though these discussions do not exhaust their characteristics. Smallholder farmers, including other low income people who are excluded by the formal financial system use this as a vehicle to mobilize savings for investment and for upkeep. Most of them are coordinated and facilitated by Non-Governmental Organizations. There are several Village Savings and Loans Association in the Karaga district under this arrangement.

2.4.10 Village Savings and Loans Association (VSLA)

The inspiration for VSLAs came from rotating savings and credit associations (ROSCA) and accumulating savings and credit associations (ASCA) and was developed by CARE international and VSL Associates during the 1990s (Ashe, 2002).

The purpose of the intervention is to encourage the formation of groups with fifteen to twenty-five members who are then trained to manage their own village savings and loan association. As no external capital is provided, the groups are essentially self-managed financial intermediaries.

The primary focus of the concept is on savings, asset building, and the provision of credit proportionate to the needs and repayment capacities of the borrowers. According to Aaron

(2012), VSLAs have the potential to raise the self-respect of individual members and build social capital within communities with particularly women who represent approximately 70 per cent of members.

Groups work as a member-owned financial intermediary with three products: Savings, credit and insurance. Savings are compulsory and are collected at the weekly meetings and conceptualized as buying shares. Every week, a member must buy at least one share and is permitted to buy up to five. The share value is set by the group and written in the group's constitution.

Finally, the simple organization into groups may improve the level of social capital among group members by enhancing their mutual trust, information flows and joint decision making, all of which is thought to be conducive for economic activity (Coleman 1988, 1990).

Beyond the increase in savings in VSLA, Aaron (2012) found significant increases in the use of credit, including credit used for investment purposes, according to participants' own statements. The study also revealed they use their savings for investments, primarily in agriculture which further improved flow of money into agriculture and small scale businesses, finding a statistically significant increase in the use of fertilizer and irrigation, followed by an increase in the value of maize sold.

2.5 Motives for Savings

Although numerous studies have been carried out on saving behaviour, according to Xiao and Noring (1994), only a few of these have aimed to investigate motivations for saving directly. Research on motivations to save is, however, of both theoretical and applied interest. It can help financial counselors and educators to have a deeper understanding of the goals of people's financial behaviours (Canova *et al.*, 2005).

The theme of saving motives was first treated by Keynes (1936). He identified eight different motives: **(1) ''Precaution''**, which implies building up a reserve against unforeseen contingencies; **(2) ''Foresight''**, which includes providing for anticipated future differences between income and expenditure (the life-cycle motive); (**3) ''Calculation'',** which refers to the aspiration to earn interest; **(4) ''Improvement''**, which means to enjoy a gradually improving standard of living over time; **(5) ''Independence''**, which refers to the need to feel independent and to have the power to do things; **(6) ''Enterprise''**, which means having the freedom to invest money if and when it is favorable; **(7) ''Pride or Bequest''**, which concerns leaving money to heirs (the bequest motive); and **(8) ''Avarice''** or pure miserliness.

Browning and Lusardi (1996) added the ninth one thus, "**The down-payment motive"**, which is to accumulate deposits to buy houses, cars, and other durables They also believe that there is considerable heterogeneity in the motives for saving. 'It is unlikely that a single explanation will suffice for all members of a population at any given time or even for the same person over a long stretch of time'. According to Kodom (2013), there is also a widespread feeling that the wealthy have different motives to save from the less wealthy.

Many scholars from different parts of the world have conducted different studies using different methodologies on the savings habit of people in various countries and have outlined different savings motives. Katona's (1975) work, for example, showed that in the United States in 1960s, people saved, in order, for emergencies (ill-health, unemployment), to have funds in reserve for necessities, for retirement or old age, for their children's needs, to buy a house or durable goods and for holidays. Few claimed to save to earn future income (in the form of interest or dividends) or to leave money to their heirs.

Issahaku's (2011) work in Ghana in the Upper West region revealed that the rural people saved "to cope with unexpected emergencies such as funerals, accidents, sicknesses, natural disasters, among others; To buy some assets (that is, target saving) such as grinding mill, motorbike, residential houses, sewing machines, among others; To pay for predictable expenses (such as school fees/levies, health insurance premium, among others); To allow for future consumption (that is food at a time when stores are used up); To make provision for retirement; To accumulate enough funds for investment; To employ the teaming unemployed youth; To reap higher returns; For luxury".

Kotlikoff (1989) revealed that about 30% of family saving in the United States can be explained by motives of a precautionary nature, in particular by anxieties about old age. From other studies conducted in Holland (Alessie *et al.*, 1997) and in Sweden (Lindqvist *et al.*, 1978), it emerges that the precautionary motive is one of the most important reasons for saving. Johnson (1999), in a study carried out on refugees of Asiatic origins, revealed that this group saves mainly for emergencies and their children's education.

According to Horioka and Watanabe (1997), Japanese families save mainly for retirement and for precautionary reasons, which is consistent with the life cycle hypothesis. In Australia, Harris *et al.* (2002) found that the three most frequently indicated reasons are ''Retirement'', a motivation linked to the life cycle, ''Holidays'' and ''Rainy days'' (a precautionary motive). Other motives were investing for a house, paying back debts, providing for children's education, and purchasing durable goods. The bequest motive is relatively less important.

In a cross-cultural study, Webley *et al.* (2000) compared the saving motivations of Italians, English and Israeli respondents. In comparison to the English and Israeli group, Italians were more inclined to save as much as possible. They controlled their expenditure more easily and preferred to have more substantial reserves put aside. The important saving motives for them were to save for their children's education and for medical care. For the English respondents, on the other hand, saving for future purchases was more important.

In his work on college tuition and household savings and consumption, Souleles (2000), found that households appear to do a relatively good job smoothing their consumption into the academic year, despite large expenses. This was consistent with Modigliani and Brumberg (1954) Life-Cycle Theory of saving and consumption. There was some evidence of a delayed decline in consumption and of a decline for households with children first beginning college, but the magnitudes of these declines are rather small.

Warneryd (1995) distinguished between four motives for saving and stressed that a person can save for one or more motives at the same time. Warneryd (1995) labels the first ‘‘saving as a continuous habit’’. This is a well-established habit of saving which is not related to any specific goal. The second, the so-called **‘‘precautionary motive’’**, is due to uncertainty about the future. The third motive for saving is the **‘‘bequest motive’’**, which is saving for the well-being of the family after the person’s death. The fourth and last motive is called the **‘‘profit motive’’** and consists of the wish to make an income from money put aside.

The results of a multiple regression analysis indicated that the motivations **‘‘saving as a continuous habit’’** and **‘‘precaution’’** contribute significantly to explaining the variance of the total sum of money saved. Given that the respondents for this study are largely rural farmers, who are not salaried workers earning regular income, retirement and other motive may not cross their minds. It is therefore relevant to study them and understand what they say about saving motives.

2.6 Predictors of Savings Behaviour of Rural Smallholder Farmers

This section presents the effects of the predictor variables on savings behaviour of rural smallholder farmers. The literature that follows discusses the effects of demographic and social and institutional variables used in the study. The review is done with references from a wide range of authors from different perspectives.

2.6.1 Effects of Demographic Predictors on Saving Behaviour

The influence of demographic variables on savings behaviour permeates across most researches on savings (Lera López, 1998; Fernandez *et al.*, 2009). Factors such as age, gender, marital status, education or civil status are shown as important aspects in the decision to save.

2.6.1.1 Effects of Age on Savings Behaviour

Fernandez *et al.* (2009) investigated the determinants of savings from eight countries in Europe. In accordance to the life-cycle economic approach that people tend to save more as they reach retirement, they have found that age has a positive impact on savings. Furthermore, the results showed that the probability to save is rising with age, but at a progressively lower rate. Demery and Duck (2006) also found that saving rates are in line with the life-cycle model. They have concluded that people in the working life are more interested in savings when they reach the age of 50.

Quartey and Blankson, (2008) also observed that household members who are less than 18 years held greater proportion of the savings account including susu. Even though the members below held a large proportion of savings account, those aged 60 years and above had the highest mean savings balance followed by those who are less than 18 years. This result, however, contradicts the Life Cycle Hypothesis (LCH) which predicts that working population accumulate savings whiles the young and the old consume past savings (Quartey and Blankson, 2008).

Also, in Indonesia, Kelly and Williamson (1968) regressed per capita household saving against per capita household income for five household age groups. They found that the age of the head of the household is an important determinant of household savings in rural households and that the average and marginal saving rates rose with the share of agricultural income. However, Shultz (2005) who analyzed the demographic determinants of savings in Asia found no significant relationship between savings and age composition.

In Ghana, Anang *et al.* (2015) in studying the determinants of savings habits among clients of Bonzali rural bank in the Tolon district of the northern region revealed positive and significant relationship between age and the respondents' propensity to save. A unit increase in the age of the respondent increases the probability of saving by 0.01, as indicated by the value of the marginal effect.

Again, in Safo (2015) study of savings behaviour of household heads in rural communities in the Shama district of the western region of Ghana, he found a negative but significant relationship between age and probability to save. According to him, an increase in the age of household heads by 1 year will have the probability of 0.0427573 of reducing household heads savings.

In a study in the rural areas of Ghana in 2008 by Bendig *et al.* (2009) assessed how savings are influenced by remittances, risk exposure and shock experience. A total 350 rural folks were selected. The findings revealed that education, household size, remittances, death of a relation and other shocks had a statistically significant effect on savings. On the female

being the head of the family, unemployed, self-employed had a negative relationship with savings.

Even though age seem to influence savings differently at different locations of varied categories of respondents. I expect that age will have a significant influence on savings among the smallholder farmers in the Karaga district.

2.6.1.2 Effects of Sex on Savings Behaviour

Using a multiple regression approach for a comparative study in Malaysia, Sabri (2010) revealed that females saved more and concluded that gender was a determinants of savings. He compared saving behaviour and financial problems in students. The survey was carried out among 350 students, offering various courses in colleges in Malaysia.

Gerrans and Clark-Murphy (2004) posits that there is a close relationship between age and gender. Using a survey of members of the Superannuation Scheme for Australian Universities, they have concluded that younger females are more likely to have a higher risk tolerance and a bigger chance of not saving. It is also revealed that gender has an impact on the willingness to save. Other studies point out the higher degree of risk aversion among women (Pan and Statman, 2010). Floro and Seguino (2002) show evidence that women do save more relative to men, even after an increase in women's income and bargaining power. Furthermore, saving decisions are also found to be driven by the connection between gender and marital status rather than by gender alone.

Dupas and Robinson (2013) worked in collaboration with the Bumala village bank in Kenya to randomly provide small business owners with access to savings accounts. Four to six months after account opening; women in the treatment group had 45 percent higher daily investment in their businesses than women in the comparison group.

Thus women have the capacity to save but were faced with a number of barriers. Also, Denizer *et al.* (2000) in the analysis of the household savings in the Transition using data from Bulgaria, Hungary, and Poland noted that households headed by women exhibit significantly higher savings rates than that of men in these three countries.

Kodom (2013) found that women saved more than men in the Ga-East Municipality of Ghana. Similarly, Mumin *et al.* (2013), who investigated the decision by household heads to save with financial institutions in the Bole District of Ghana. The authors found that being a male household head was negatively related to the decision to save.

Also, Chowa (2008), show that both women and men are saving successfully. However, women are saving better than their male counterparts across levels of education, marital status, and type of work.

Another study conducted by Wolday and Tekie (2014) indicates that male headed households had significantly higher cash savings (about 2.2 times) than female households. Conversely, an empirical study conducted in Philippines by Bersales and Mapa (2006)

shows that male households are better saver because the female has no power to control income even their own income.

Touhami *et al.* (2009) also used multiple linear regression analysis in their micro-econometric analysis of household savings in Morocco. The findings further suggested that, gender seemed to be important in influencing household saving behaviour, because males were found to be saving more than females. Again, in Surya Prakasa Rao Gedela (2012) study of the determinants of savings behaviour in rural and tribal households of Visakhapatnam district in India, he found that male headed households save more than female headed households.

Interestingly, some researchers have concluded that there is no gender difference in savings and investment behaviour. In the case of Zhong and Xiao (1995), they found no gender difference in the dollar holdings of stocks. DeVaney and Su (1997) also concluded that the determinants of retirement planning knowledge were similar for men and women, and Masters and Meier (1988) again found no difference in the risk taking propensity of male and female entrepreneurs. It's my expectation that sex will have an influence on the savings of the smallholder farmers understudy, despite the difference in opinion of scholars and researchers.

2.6.1.3 Effects of Marital Status on Savings Behaviour

A number of studies have indicated that marriage may have a variety of positive effects on the well-being of individuals and families, guiding for other demographic and

socioeconomic factors. These effects include better financial well-being, better health, longer life, higher achievement of children, and higher earnings for married men (see a review by Waite, 1995; Waite and Gallagher, 2000). A study by Hirschl, Altobelli, and Rank (2003) further indicated that marriage enhanced the lifetime probability of affluence, and Whites and women were more likely to benefit from marriage compared to Blacks and men.

Marriage could be a wealth enhancing institution, disproportionately altering total output and total consumption (Lupton and Smith, 2003). According to Bercker (1981), a larger total output from complementary production of married couple could be larger than the sum of the outputs of each produced separately.

Studies that examine the impact of marital status on savings and family wealth consistently suggest that marriage can improve wealth accumulation (Seigel, 1993; Hao, 1996; Lupton and Smith, 2003). For example, through the analysis of data from the Health and Retirement Survey and the Panel Study of Income Dynamics, Lupton and Smith (2003) find that married couples save significantly more than other household types, an effect not fully explained by their higher incomes nor the simple aggregation of two individuals' wealth. Similarly, Seigel (1993) reports that currently married older couples have higher median incomes and net worth than older adults who were widowed, divorced, or never married. The study by Hao (1996) also indicates that married families have greater wealth than other types of families, and marriage reinforces the promoting effect of transfers on wealth.

Some of these studies also examine the impact of marital history on wealth accumulation. For example, several studies find that individuals who remain married throughout the life course have significantly higher wealth than those who are not continuously married, and divorce in particular has negative impact on wealth accumulation (Holden and Kuo, 1996; Wilmoth and Koso, 2002). Remarriage offsets the negative effects of a marital dissolution (Wilmoth and Koso, 2002).

As already stated before, empirical research found that civil status as well as domestic partnership has been found to influence savings behaviour. Married persons are more likely to be more interested about their wealth and savings (Li *et al.*, 1996; Fernandez *et al.*, 2009). Man-Yee and Heather (2010), have taken the discussion further and consider that savings are usually "shared" between partners, without any difference between being married or not. Investments, on the other hand, are being held independently by each couple member. Additionally, savings tend to influence also the psychological well-being of the partner, where investments or debt held by one partner do not seem to have an influence on the behaviour of the other partner. However, number of marriages also has a negative effect on family wealth (Hao, 1996). I expect married smallholder farmers to be engaged in savings than the other marital status. My expectation is hinged on the fact of the two or multiple income streams of married people.

2.6.1.4 Effects of Income on Savings Behaviour

One of the basic determinants of savings which almost all the studies in the area of savings have tried to study is income. Different studies using different methods have been

conducted in different parts of the world and all have found a positive relationship between income and savings. Income has been regarded as the most significant element in determining the saving behaviour of an individual. More income means, usually, more economy and vice versa. Different strains of the working relationship between economy and income have been identified and tested (Asghar and Ahmed, 2004). Some surveys found a statistically significant event of income on saving, and other studies found its insignificant effects, whereas, few written reports have analysed the saving functions by including different socioeconomic factors, while some others estimated kinds of savings such as savings in the form of assets, etc. (Ahmed, 1996). Still, the income has been reckoned as one of the main determinants of the saving part. The saving function represents the divergence between income and consumption spending.

Based on the findings, some scholars have propounded certain theories. Income is also an important feature in the process of household savings. In general, literature on savings considers that a higher income raises the chances of wealth accumulation (Attanasio and Székely, 2000; Fernandez *et al.*, 2009). Other researchers have a different opinion. Huberman *et al.* (2007) and Huggett and Ventura (2000) found evidence that people with low income do not save usually more than high income persons because of their expectance that the public pension systems will ensure them with a retirement income.

Fernandez *et al.* (2009) also asserted that income and job uncertainty are highly correlated, so there is a close link between job uncertainty (income uncertainty) and the savings. There is evidence that people who do not have a stable job are more willing to save more, taking

into consideration the uncertainty which lies ahead. Nwibo, (2013) also justified that increase in the income level of a household will bring about increase in the saving and investment capacity as increasing income will result to surplus that will be saved and invested after consumption expenditure has been made.

For instance, in a cross sectional study by Kibet *et al.* (2009) in the rural regions of Kenya into the determinants of savings among teacher, entrepreneurs and farmers. A total of 359 respondents was chosen using a multistage sampling approach. The study revealed that there is a high possibility for teachers to save their high income level and service missions. With respect to the businessmen there was a positive relationship between income and savings. Farmer's savings were determined by income and rate of interest.

Also, in Newman *et al.* (2008) assessment of the household saving pattern in rural Vietnam in 2006. They employed a Vietnam Access to Resource Household (VARHS) data. A total 2324 respondents' data were analysed using percentages. Wealthy families had a positive relationship with savings.

In the same vein, a study by Choudhury (2005) among rural and urban households in India revealed that population and income had a direct relationship with saving in the urban, rural and the entire regions of India. Nevertheless, there were disparities among the marginal propensity to eat up in the rural, 0.0156 and urban, 0.5373 in India. These were accomplished through the use of cross-sectional data that has been assembled over time from 1950-1962.

In Issahaku (2011) study of factors influencing the savings of rural households in Nadowli District of Ghana, he used a multiple linear regression analysis in explaining the factors affecting savings and further revealed that income level had a direct relationship and significantly accounted for household savings level in the district.

Mahlo (2011) using a regression analysis along a panel data studied whether there is a relationship between family savings and income, consumption, interest rate and debt in South Africa and discovered that there is a lineal relationship between income and household saving as well as between household savings.

Beyond these, Quixia (2004) in his survey data used descriptive statistics in analyzing the impact of rural enterprise on household savings in three selected regions in China; Jiangsu, Shandong and Sichuan. The empirical result showed that income seems to be an important determinant of savings. He found a positive correlation between income and savings rate.

Income was also a significant predictor of improved savings in India (Agrawal, Sahoo, and Dash, 2007; Athukorala and Sen, 2004). Considering the convergence of most of these literature, this study expect income to conform to literature by demonstrating positive and significant influence on savings of smallholder farmers.

2.6.1.5 Effects of Level of Education on Savings Behaviour

Previous studies have examined the effects of education on savings (Morisset and Revoredo, 1995; Laiglesia and Morrisson, 2008). Education is a factor which is closely

tied to wealth accumulation and its influence over income is direct. Over a long period of time, education affects the savings of different individuals and its effect depends also on the region and economic development within that area. Morriset and Revoredo (1995) found that for each point increase in education, the savings rate increase at 0.37%. Indirectly, education has the ability to modify the behaviour of households, even if the authors themselves believe it is not the best proxy for determining the savings attitude of households. One of the best factors with an important impact over savings is financial education. Using the DNB (De Nederlandsche Bank) Household Survey, Van Rooij *et al.* (2011) provide evidence that financial education is strongly influencing net worth.

First, a higher degree of financial knowledge increases the possibility of having gains from the stock market. Second, it has a large impact on the creation of retirement plans which lead to a boost in savings. Again, Burney and Khan (1992) posited that educated farmers tend to save more than uneducated farmers as savings can be used for the good education of their children. Without mincing words, Nwibo (2013) stated that an educated farmer can save and invest better than an illiterate farmer. In Annamaria (2000) in the study of savings pattern among families in the United States of America conducted a regression analysis and it was established that household heads with higher education had higher savings. Overall, financial literacy has been found to influence directly as well as indirectly the wealth and savings of households, proving to be much more efficient in determining the saving behaviour of households. Additionally, Quixia (2004) in his survey data used descriptive statistics in analyzing the impact of rural enterprise on household savings in three selected regions in China; Jiangsu, Shandong and Sichuan. He further used logit

regression analysis and found that education level has a direct impact on people sacrificing current consumption for the future, thus the masses with a high educational degree, hold a higher trend of presenting.

It's my view level of formal education will have an influence of saving that's, because I expect smallholder farmers who have had some formal education to save than those who do not.

2.6.1.6 Effects of Level of Dependency on Savings Behaviour

Attempts to introduce the household size effects on the life-cycle model have also reveal that larger family size reduces the aggregate saving rate (Davies, 1988). Furthermore, using the OLS method, Orbeta Jr. (2006) has estimated a saving function using income and number of children as dependent variables. The results tend to agree with previous studies and show that an increase in the household size has a negative impact on savings. This effect is even more apparent in the case of low wealth family, further depressing the already low saving rates. Likewise, the study reveals that reducing the household size can be a positive factor for savings and wealth.

This effect is even more apparent in the case of low wealth family, further depressing the already low saving rates. Likewise, the study reveals that reducing the household size can be a positive factor for savings and wealth. Kibet *et al.* (2009) posited that an increase in household will bring about increase in dependency ratio and as such is bound to cause a decline in saving, while a decline in dependency ratio will result in an increase in saving.

Rehaman *et al.* (2010) who studied the demographic and other influences on long term saving behaviour in India also revealed that large family size had a depressing effect on long term household saving rate. It's reported by Haruna (2011) that household size holds an inverse and substantial effect on household savings.

Again, in a study by Rehman *et al.* (2010) to evaluate the socioeconomic determinants of households saving behaviour in Pakistan, 293 households from the Multan District was used. The survey was taken between 2009 and 2010. It revealed that household size and consumption management was a huge financial burden on household heads and for that matter an important and significant predictor of savings behaviour of the household heads.

Also, Touhami *et al.* (2009) used multiple linear regression analysis in their micro-econometric analysis of household savings in Morocco. They reported that family size suffered a negative effect on savings in urban neighborhoods, whereas in rural areas this had no impact on savings. Though insignificant, Quixia (2004) found Family size to be inducing negative effects on savings rate.

2.6.2 Effects of Social and Institutional Variables on Savings Behaviour

This section presents the effects of social and institutional factors on savings behaviour of rural smallholder farmers.

2.6.2.1 Effects of Peer Influence on Savings Behaviour

In the study of Duflo and Saez (2001), the researchers found that peer effects play an important role in retirement savings decisions. The survey was conducted in United Stated by collecting individual data from employees of a large university with 12,172 employees who was divided into 358 departments. This study was to establish if information and social interaction plays a role in retirement planning decision. These findings suggested that members of the same group share a common environment, which may influence their behaviour. The reason is people with similar preferences tend to belong to the same group. Both of these factors generate a correlation between group behaviour and individual behaviour which consequently affect their saving behaviour. In trying to examine the predictors of savings behaviour of young people in Toronto, Canada, Erskine, Kier *et al.* (2005) collected data on a total number of 1806 young Canadians aged 12 to 24. According to the economic theory of time preference and psychological theories about adolescent crowds, they predicted that the groups would be more patient and more likely to save money if they are placed high on the adult or academic-oriented dimension while the groups that are placed high on the peer-oriented dimension were expected to be less patient and less likely to save money. Thus, the result indicates that peer influence has an impact on individuals' saving behaviour.

Nonetheless, Beshears *et al.* (2010) conducted a field experiment involving 15000 employees from 500 manufacturing firms in USA about retirement saving behaviour. The population was divided into two major groups which are employees who contributed to company retirement saving plan and employees who had no contribution to the plan. They

found that there is a weak correlation between peer influence and retirement saving behaviour as the peer influence only encourages a small amount of co-workers to participate in the retirement saving plan.

2.6.2.2 Effects of Institutional Influence on Savings Behaviour

Beverly and Sherraden (1999) suggested that more emphasis should be placed on the roles of institutions, argued that "individual and household saving behaviour is shaped by the institutional processes through which saving occurs.

The institutional theory of saving underscores the important role that institutions play in savings. It proposed five institutional concepts as being influential in predicting individual saving and asset accumulation, particularly among low-income households: 1) access, 2) information, 3) incentives, 4) facilitation, and 5) expectations (Sherraden, 1991; Beverly and Sherraden, 1999; Sherraden, 1999; Sherraden *et al.*, 2003).

Access is the extent to which an individual is able to use and communicate with institutions (Sherraden *et al.,* 2010). Access to institutional mechanisms that make the depositing process more available, convenient and reliable may have an impact on asset accumulation. savings rates are likely to be higher when access to these means are permitted. Some researchers like Cagan (1965) and Carroll and Summers (1987) suggest that the availability of institutionalized saving opportunities encourages savings because it brings to bear the needed awareness on savings and to guide people to make savings decisions.

Aaccording to Bayer *et al*. (1996), another important institutional determinant of saving is financial information, normally offered through financial education. It is believed that when people are made more aware of their saving options and outcomes, savings will be higher. Often financial education is provided to employees whose companies offer pension plans. Studies report that when financial education is offered to employees, participation levels, as well as contribution levels in some cases are higher.

Thirdly, according to Sherraden *et al*. (2010), incentives are institutional factors, both financial and nonfinancial, that make saving more attractive. Incentives are inducements to motivate higher savings. Interest rates and rates of return on investments are the most familiar. Although empirical evidence concerning the effects of incentives is inconsistent (see Engen, Gale and Scholz, 1996; Hubbard and Skinner, 1996; Poterba, Venti and Wise, 1996), the proposition is that, generally, an increase in the rate of return will cause an increase in savings.

Facilitation is the degree to which people are able to take advantage of plans that make saving easy and choosing future consumption at the expense of current consumption, such as automatic payroll deductions (Beverly and Sherraden, 1999; Sherraden *et al.*, 2010). According to Madrian and Shea (2000), these are institutional arrangements that provide mechanisms that make saving more manageable and convenient. Empirical evidence on facilitation is limited at this time. But on the whole, the proposition is that these arrangements will more likely increase individual savings. One study by Madrian and Shea (2000) on 401(k) participation in the United States of America finds participation and

contributions rates to be higher after the employer started automatically enrolling employees into the 401(k) plans.

Expectations, as an institutional determinant of saving, refer to the specific saving goals, targets and rules communicated to participants by the programs. Individuals with specific saving expectations are more likely to save more than individuals with no saving expectations.

2.6.2.3 Effects of Self-Control on Savings Behaviour

According to Baumeister (2002), Self-control is the ability to identify and regulate one's emotions and desires. It is characterized by the exertion of will power, self-discipline and ability to delay gratification. Esenvalde (2010) provided empirical evidence that self-control was positively associated with saving behaviour. The author claimed that self-control is a very solid and uniform factor used to explain saving behaviour. In this research, snowball sampling method has been adopted and survey questionnaires were mailed to target respondents. Primary data were collected from 272 employees with regular incomes in the United States. Lim, Sia, and Gan (2011), also confirmed a significant impact of self-control on saving behaviour. This study was conducted in Malaysia whereby 500 survey questionnaires were distributed to participants who aged above 21.

In this study, the researchers found that ability of individual to maintain self-control for saving depends on the strength of two opposing forces known as desire and willpower. The finding shows that people are more likely to save if they are able to control themselves via implementing sound budgeting and economic cost assessment.

In the study of Otto (2009) which was aimed at investigating the measures that enhance our understanding and predict saving during adolescence. Yet, the paper also studied on whether the adolescent likes spending a lot or finds it difficult to resist temptation. From the research, it was found that conscientiousness was associated with positive saving attitudes (Nyhus, 2002) and financial self-control (Warneryd, 1996). In addition, it was found that psychological variables relevant to adult saving yet highlights that self-control and ability to delay gratification are important skills for saving when young. The research was conducted by requesting 290 students from two colleges which are Ex Mouth Community College and Clyst Vale Community College in United Kingdom to complete a four-page anonymous questionnaire that consists of five parts.

2.6.2.4 Effects of Financial Literacy on Savings Behaviour

Financial literacy is defined as sufficient knowledge of personal finance facts and terms for a successful personal financial management (Garman and Forgue, 1997). Meanwhile, Anthes (2004) defines financial literacy as the ability to read, analyse, manage and communicate about the personal financial conditions that affect the material well-being. A definition that properly covers this idea is proposed by the OECD, where financial literacy is regarded as a combination of awareness, knowledge, skill, attitude, and behaviour needed to make sound financial decisions and ultimately achieve individual financial well-being (OECD, 2013). Delafrooz and Laily (2011) had conducted a study in Malaysia to examine the degree to which financial literacy influenced the saving behaviour. This research had been conducted via quantitative methodology by distributing self-administered questionnaires to 2246 employees in the public and private sectors. The

finding shows that saving behaviour is significantly influenced by the financial literacy whereby individuals with low level of financial literacy are not intended to save and eventually encounter financial problems in future.

Sabri and MacDonald (2010) also demonstrated that financial literacy had a positive and significant effect on college students' savings behaviour. They had included 3850 students from 11 universities located in Malaysia and questionnaires were distributed to 350 students randomly selected from each of the targeted universities. The result of this research suggests that participants who have greater knowledge on personal finance tend to engage in effective saving behaviour. The study of Hilgert *et al.* (2003) also found to be consistent with the above study. The researchers explore the connection between knowledge and behaviour of US Household by using the secondary data adopted from the University of Michigan's monthly Surveys of Consumers conducted in 2001. This survey was carried out by interviewing 1004 households within the state via telephone. The researchers found that the correlation between financial knowledge and saving behaviour was significant. Result shows that households obtain higher financial scores (answered the quiz correctly) tend to have higher scores on saving index (achieved more saving practices). Thus, the researchers concluded that increase in financial knowledge can lead to better saving behaviour.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology of the study. Section 3.1 presents the operational definitions of some key terminologies. Sections 3.7.1, 3.7.2 and 3.7.3 highlights the descriptive statistics, reliability analysis and binary probit regression model, respectively. Section 3.8 describes the conceptual framework which shows how explanatory variables such as demographics, peer influence, institutional influence, self-control, financial literacy, age, sex, marital status, level of education, dependency and income are linked to household credit savings behaviour The rest of the sections present the description and measurement of variables, geographical area of study, sources and methods of data collection, data collection instruments, sampling procedure, and limitations of the study.

3.1 The Study Area

The Karaga District is one of the twenty-six administrative districts in the Northern Region of Ghana. It was carved out of the then Gushegu-Karaga district by Legislative Instrument, LI 1787 and officially inaugurated in August, 2004. The current population of the district according to the Population and Housing Census (PHC, 2010) is 77,706, comprising 37,336 males and 40,370 females.

The District is located in the North-Eastern part of Northern Region, Ghana. It lies between latitudes 9°30’ South and 10°30’ North and longitudes 0° East and 45’West. It has a total

area of 3,119.3 square kilometers. It shares common boundaries with four districts in the Northern Region: West and East Mamprusi to the North, Savelugu/Nanton to the West and Gushegu (the mother district) to the South and East as shown in figure 3.1. Karaga, the district capital is 24km from Gushegu and 94km from Tamale, the regional capital (KDA Profile, 2010). The vegetation is a typical guinea savannah type, characterized by tall grasses interspersed with drought resistant trees such as the Shea and dawadawa, which are the major economic trees. The tall grasses are also used in roofing and for other art works. The soil type is mainly savannah ochrosols, ground water laterites formed over granite and Voltain shales. There are small areas of savannah ochrosols with some lithosoles and brunosols. The laterites are similar in acidity and nutrient level to the ochrosols, but are poorer in physical properties, with substantial amounts of concretionary gravel layers near the top horizons and more suited for road and other constructional works than supporting plant roots systems (KDA Profile, 2010).

The climate of the District reflects a typical tropical continental climate experienced in Northern Ghana. The rainy season starts from May, peaking in August and September. The rest of the year is virtually dry. Rainfall amount is between 900 and 1000 mm per annum. Temperatures are high throughout the year with the highest of 36ºC and above in March and April. Low temperatures are experienced between November and February (the harmattan period) (KDA, 2010).

3.1.2 Economic Activities and Infrastructure of the District

The major economic activity in the district is farming. Agriculture in the district is predominately small-holder, subsistence and rain fed with an average farm size of 1.5 – 2.5 ha. Major traditional crops cultivated in the district include maize, sorghum, millet, soya bean, groundnut, cowpea, cassava, rice and yam. Besides crop production, the average farm family raises a wide variety of livestock such as goat, sheep, cattle and local poultry (MTDP, 2014).

The district capital, Karaga also has two earth dams surrounded by a valley where farmers depend for vegetable production in the dry season. The district also has two feeder roads linking the regional capital Tamale, through the Savelugu-Nantong district. A recognizance survey conducted in the District before the commencement of the study revealed the presence of financial institutions such as Bonzali Rural Bank, Tizaa Rural Bank Ltd and GN Bank that serves the daily banking needs of the Karaga district. Other financial institutions or organizations namely Community Livelihood Improvement Program (CLIP) and Gub-Danda Credit Association (GDCA). These financial institutions form the main lending institution for the people apart from other informal sources.

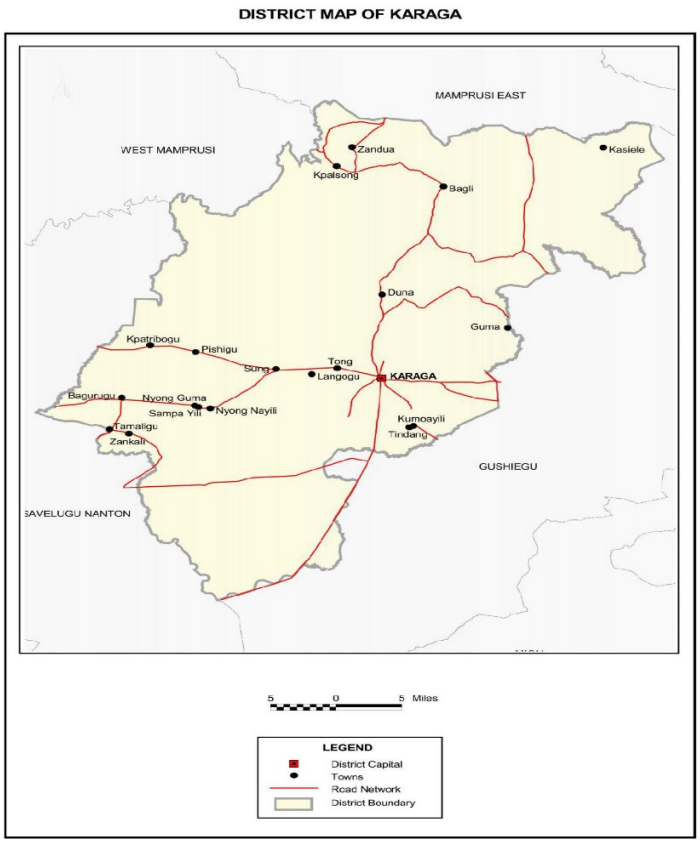

Figure 3.1: District Map of Karaga

Source: Ghana Statistical Service, (2014)

3.2 Design of the Study

Burns and Grove (2009) define a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. Parahoo (2006) also described a research design as a plan that describes how, when and where data are to be collected and analyzed. Again Polit, Hungler, and Beck (2001) define a research

design as the overall plan for collecting and analyzing data including specifications for enhancing the internal and external validity of the study.

The study is a descriptive study. According to Burns and Grove (2009), descriptive research is designed to provide a picture of a situation as it naturally happens. It may be used to justify current practice and make judgment, and also to develop theories. Thus, in this study, descriptive research was used to obtain a picture of savings behaviour of rural small-holder farmers and how demographic and other variables influence their savings behaviour.

3.3 Population

The target population is defined as the entire group of people the researcher is interested in (Easton and McColl, 1997). In the context of this study, the targeted population is all smallholder farmers in Karaga District.

3.4 Sampling, Sampling Procedure and Sample Size

Sampling design is a process to select an appropriate amount of units from the population of interest to provide accurate information about the entire population (Hair, Babin, Money, and Samouel, 2003). Multi-stage sampling techniques were employed in selecting the smallholder farmers for the study, comprising of purposive sampling and simple random sampling techniques. Karaga district is purposively selected due to its agrarian nature and the low savings in the district.

The Karaga district has five (5) administrative area councils. They are Karaga area council, Sakolu/Namburugu area council, Bagli /Zandua area council, kuduli area council and Pishigu area council (DADU, 2009). However, two zones were purposively selected from the four (4) zones. The zones are Karaga zone and Pishigu zone. The reason for selecting Karaga zone is that it harbors the district capital with a lot of infrastructure and exposure to development agents. Whiles the Pishigu zone is the farthest and is located towards the Tamale-Bolga road and far from the other zones. It's important to note that the Pishigu zone is the only zone that is not located on the main Tamale-Karaga stretch (outlier).

Given the large nature of the farmer population of the district, Cochran (1963) formula was used to determine the sample size. The formula is express as:

$$n = \frac{z^2 pq}{e^2} \quad \text{.....(1)}$$

Where n is sample size, z^2 is the abscissa of the normal curve at 95% confidence interval, p is the estimated proportion of an attribute that is present in the population, q is 1-p, and e is the margin of error accepted.

n= Sample size for infinite population

Z= 1.96 (at 95% confidence level),

p= 0.8, (estimated proportion of small holder farmers)

q= 1-0.8= 0.2 (precision of the estimate at 5% (0.05)

e= 0.05 (Margin of error)

Hence the desired sample is

$$n = \frac{(1.96)^2(0.8)(0.2)}{(0.05)^2} \quad \text{..... (2)}$$

$$\frac{(3.8416)(0.16)}{0.0025} \quad \text{..... (3)}$$

$$= 245.86 \approx 246$$

From the formula, the minimum sample was 246 smallholder farmers, however, 22% of the estimated sample was included to make the sample 300 in order to improve the validity and reliability of the research findings.

3.4.1 Sampling Procedure

STAGE I

- The district is comprised of five area councils, namely Karaga, Pishigu, Sakolu/Namburugu, Kuduli and Bagli/Zandua. Karaga area council and Pishigu area councils were purposively sampled. The reason for selecting Karaga area council is that it harbors the district capital and has a lot of infrastructure and exposer to development agents. Whiles the Pishigu area council is the farthest zone among the five and located towards the Tamale-Bolga (outlier), so it's likely to have peculiar characteristics from the other five. It's important to note that the Pishigu area council is the only area council that is not located on the main Tamale-Karaga stretch.

STAGE II

- In the Karaga area council, there are 13 communities, whiles the Pishigu area council has 36 communities. Simple random sampling was used to select five (5) Communities from each of the two area councils, making ten (10) communities for the study.

STAGE III

- According to GSS (2014), the Karaga district has a population growth rate of 2.5% per annum. At this stage, simple random sampling was again used to select thirty (30) smallholder farmers from each of the ten (10) selected communities for the study. However, for the purpose of resource limitation, the three hundred sampled population was evenly distributed among the ten sampled communities in other to reduce bias. The table below presents the list of sampled communities with their respective populations from the 2010 populations and housing census.

Table 3.1: List of Study Communities and Number of Respondents

Sampled Communities from Karaga Area Council	Respective Community Population	Number of Sampled Respondents	Sampled Communities Pishigu Area Council	Respective Community Population	Number of Sampled Respondents
Karaga town	12,800	30	Pishigu town	4,141	30
Gbitigu	260	30	Sung	2,286	30
Nangung	499	30	Nyong-Sampayili	482	30
Nangunkpang	564	30	Nyong-nayili	1,602	30
Tong	1,807	30	Kpataribogu	1,946	30

3.5 Data Collection Tools

Primary data was collected for this study. The data was collected from smallholder farmers using personal interview with the aid of semi-structured questionnaires. Whereas literature materials like district profile, medium term development plan, census report and other reports were sought from stakeholder organizations like Ministry of Food and Agriculture (MoFA), District Agriculture Development Unit and District Assembly in other to review literature.

3.6 Techniques for Collecting Primary Data

According to Burns and Bush (2003), the method of data collection used would be determined by the type of data needed and pre-set research design. Thus, personal interviews were employed to collect qualitative and quantitative data on farmers for the survey.

Table 3.2: Summary of Data Required and Method of Data Collection

Study concepts	Objective	Information required	Source of Information	Method of data collection
Savings Behaviour	To ascertain the savings behaviour of rural smallholder farmers in Karaga	• Saving or not • Forms of savings • Place of savings etc.	Small holder farmers	Personal interviews
Demographic and Socio-	To investigate the influence of demographic and socio-economic	• Age • Income • Sex	Smallholder farmers	

Economic Factors	factors on rural smallholder farmers' savings in Karaga district	• Marital status • Dependency • Lev. of Edu.		Personal interviews
Peer Influence	To determine how peer influence affect savings behaviour of rural smallholder farmers in Karaga district.	• Smallholder farmers discussing savings among themselves. • AEAs engaging Smallholder farmers regarding savings. • Financial institution staff engaging smallholder farmers on savings.	Smallholder farmers	Personal interviews
Institutional Influence	To determine how institutional influence affect savings behaviour of rural smallholder farmers in Karaga district.	• Availability • Access • Information	Smallholder farmers	Personal interviews
Self-Control and Savings Behaviour	To establish the relationship between self-control and savings behaviour of rural smallholder farmers in Karaga district	• Smallholder farmers being able to control expenditure. • Smallholder farmers being able to regulate desire. • Smallholder farmers controlling themselves to enable savings.	Smallholder farmers	Personal interviews
Financial Literacy On	To determine the influence of financial	• Smallholder farmers'		

Savings Behaviour	literacy on savings behaviour of rural smallholder farmers in Karaga district	knowledge on savings. • Smallholder farmers' knowledge on financial services. • Smallholder farmers' ability to keep record. • Smallholder farmers' ability to make profitable investment.	Smallholder farmers	Personal interviews

3.7 Method of Data Analysis

SPSS, Microsoft Excel and Stata were the main software for data input and analysis. Each objective of the research was analyzed by using appropriate statistical measures. Descriptive statistic such as percentages and frequency distribution were used to describe the savings behaviour of smallholder farmers, Cronbach's alpha and multicollinearity was used to test the reliability of Likert scale items and variable intercorrelations, respectively. The Probit model was used to analyze the factors influencing savings behaviour of smallholder farmers whiles the Spearman Rank Correlation was used to determine the relationship between Peer Influence, Institutional Influence, Self-Control and Financial Literacy and Savings behaviour.

3.7.1 Descriptive Statistics

Descriptive statistic such as percentages, means, frequency distribution was used to achieve some of the objectives.

3.7.2 Reliability Analysis

3.7.2.1 Cronbach's Alpha

One of the most popular reliability statistics in use today is Cronbach's alpha (Cronbach, 1951). It determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability. The internal consistency of the research instrument was therefore tested using Cronbach's coefficient as tabled below. According to Hair *et al.* (1998), for construct measures to be accepted as reliable, its Cronbach's Alpha must exceed 6. The construct measures will therefore be retained since they are all above 6. In other to achieve this, the researcher run the data for this constructs in SPSS and further took note of the changing dynamics of the procedure. The researcher carefully used the "if deleted" option in the process. So items that were found out to be too intercorrelated were deleted in other to get the desired Cronbach Alpha for these four independent variables below.

Table 3.3: Cronbach's Alpha Analysis

Construct	Cronbach's Alpha	Number of Items
Peer Influence (IV1)	0.712	7
Institutional Influence (IV2)	0.726	7
Self-control (IV3)	0.822	9
Financial Literacy (IV4)	0.768	7

Source: Field Survey, March, 2017.

3.7.2.2 Multicollinearity

According to Saunders et., al (2009), multicollinearity test is applied to measure the extent to which two or more independent variables are intercorrelated. Hair *et al.* (1998) and Julie

(2010) proposed that the intercorrelations among independent variables should not exceed 0.90. So any intercorellation between independent variables that is in excess of 0.90 will have to be removed. This was used to test for the intercorrelations among independent variables (peer influence, institutional influence, self-control and financial literacy). The table below shows the inter-correlations among all the independent variables in this study. Since both the significant *p*-values of PI and SC and FL and II are greater than 0.05, PI is deemed independent from SC, FL and II (no correlation). Given that all the inter-correlations between the independent variables are less than 0.90, therefore there is no multi-collinearity existing among the various constructs in the measurement model (Hair *et al.*, 1998).

Table 3.4: Multicollinearity of Correlation

Control Variable			Peer Influence (IV1)	Institutional Influence (IV2)	Self-Control (IV3)	Financial Literacy (IV4)
Savings Behaviour	Peer Influence (IV1)	Spearman's Correlation Coefficient	1.00			
		sig. (2- tailed)	.			
	Institutional Influence (IV2)	Spearman's Correlation Coefficient	0.610	1.000		
		sig. (2- tailed)	0.02	.		
	Self-Control (IV3)	Spearman's Correlation Coefficient	0.710	-0.443	1.000	
		sig. (2- tailed)	0.04	0.213	.	
	Financial Literacy (IV4)	Spearman's Correlation Coefficient	0.320	0.414	-0.359	1.000
		sig. (2- tailed)	0.132	0.312	0.101	.

Source: Field Survey, March, 2017

3.7.3 Binary Probit Regression

Unlike other models, the Probit model has the power to limit the utility value of the dependent variable (savings behaviour) to lie within zero and one, and the ability to resolve the problem of heteroscedasticity (Asante *et al.*, 2011), hence the ideal model for this study. For this reason, the dependent variable, savings behaviour (Y_i) took only two values: 1 if the smallholder farmer saved and 0 if a smallholder farmer does not save.

This is specified in the model below:

$$Y_i = \begin{cases} 1 & If \quad Saver \\ 0 & Otherwise \end{cases} \qquad (1)$$

Given the set of independent variables X_i which by assumption explained saving behaviour Y_i, the expectation of Y_i can be determined given the set X_i.

In effect,

$$E[Y_i / X_i] = \Pr(Y_i = 1 / X_i) = F(X_i \beta) \qquad (2)$$

β represents a vector of parameters to be estimated.

To meet this, the researcher introduced a latent variable Y_i^* denoting the ability to save. The latent variable model is specified as:

$$Y_i^* = X_i \beta + \ell_i \qquad (3)$$

If ℓ_i ~ standard normal then,

$$F(X_i\beta) = \Phi(X_i\beta) \quad (4)$$

Where Φ is standard normal cumulative distribution frequency (CDF).

The decision to save and its latent variable are specified as:

$$Y_i = 1_{IfY_i^* > 0} \text{ and } Y_i = 0_{Otherwise} \quad (5)$$

The empirical model that was employed to determine the factors (X_i) affecting their savings behaviour is specified below:

3.7.4 Model Specification

The empirical model that was employed to determine the factors affecting their savings behaviour is:

$$Y_i = \beta_0 + \beta_1 Age + \beta_2 Sex + \beta_3 Marita\ Status + \beta_4 Level\ of\ Formal\ Education + \beta_5 Dependency + \beta_6 Income + \beta_7 Peer\ \ Influence + \beta_8\ Institutional\ Influence + \beta_9\ Self\ Control + \beta_{10}\ Financial\ Literacy + u_i \quad (6)$$

3.7.5 Description of Variables

This section provides the definition, description, and *a priori* expectations of the variables used in this study.

Table 3.5: List of Independent Variables

Variable	Definition	Apriori Expectation
Age of farmer	Number of years (No. yrs)	+
Level of Dependency	Number of people per household	-
Sex	Dummy; whether the smallholder farmer is male or female 1= if the smallholder farmer is male 0= if otherwise	+
Income	Income of smallholder farmer from with regards to the last farming season to present	+
Marital Status	Dummy; whether the smallholder farmer is married or otherwise 1= if the smallholder farmer is married 0= if otherwise	
Years of formal education	Number of years in formal education	+
Peer Influence	Average Score	+
Institutional Influence	Average Score	+
Self-Control	Average Score	+
Financial Literacy	Average Score	+

Dependent Variable (Y): The dependent variable (Y) is defined as practicing savings or not practicing savings taking the value of 1 if a farmer saves and 0 otherwise. savings is regarded here as smallholder farmers who save money with banks, MFI, Susu, ROSCAs/ ASCAs and at home.

A binary choice model was used to model qualitative responses in which the dependent or the response variable (savings behaviour) is an indicator of a discrete choice such as a 'yes' or 'no' decision. These models are analyzed in the general framework of probability models. There are numerous different types that apply in different situations in which conventional regression methods are inappropriate. There are the linear probability model

(LPM), the logit model and the probit model. In this case the probit model was used as it makes up for non-normality and heteroscedasticity of the stochastic error term (ei).

Independent Variables

Age of Farmer: This variable was measured as the number of years. Age is an important characteristic in life, especially when it has to do with how long you have been around and how experienced you are in a particular field or subject. It is expected to have a positive (+) relationship with savings as revealed in Chakrabarty *et al.* (2008) in their analysis of the saving performance of Australia found that the coefficients on age dummies suggested that households save more as they become older.

Level of Dependency: This variable was measured as the total number of people in a smallholder farmers' household who are less than 15 years and those who are above 65 years. These categories of household members may not be able to work to the economic benefit of the household, so they are expected to be dependents. It is expected to be negatively (-) related to savings, since more dependents means more cost to provide the household needs, and the more dependents a smallholder farmer has, the less money he/she has to save.

Gender of respondent: This is captured in the model as the sex of respondent and measured as a dummy. Where a male respondent is (1) and female respondent is (0). This was to account for the role gender plays in smallholder farmers' probability to save. It is expected to be positive (+).

Level of formal education: This was measured as the number of years a respondent spent in formal education. It was used as a proxy to measure respondent's familiarity with financial services and financial literacy. It was expected to be positively (+) related to respondent's probability to save. Smallholder farmers who are less familiar with financial services and financial literacy may not be well informed and positioned to save and vice versa.

Income: An income of smallholder farmers was revenue generated from the sale of farm produce and livestock from the period of the 2016 farming season to March 2017, hence the research didn't consider any non-farm income. It was restricted to last farming season in other to enable easy recollection of revenue generated.

Peer Influence

Interval scale measurement was used to measure this independent variable. In measuring the extent of peer, the researchers constructed two questions and adopted five questions from Otto (2009). These questions aided in rating the extent to which respondents are being influenced by their peers regarding their saving behaviour. Hence, a higher score signifies greater peer influence and vice versa.

Institutional Influence

Interval scale measurement was used to measure this independent variable. In measuring the extent of institutional influence, the researchers constructed three questions and adopted four questions (Sherraden *et al.*, 2003). These questions aided in rating the extent

to which respondents are being influenced by institutions regarding their saving behaviour. Hence, a higher score signifies greater institutional influence and vice versa.

Self-Control

Multistate North Central Research Project 1013 (2007), Otto (2009), and Esenvalde (2011) used a number of questions to reliably measure self-control in their respective studies of the variable and its effects on savings behaviour. Questions from these studies were therefore adopted to measure the smallholder farmers' ability to control impulse purchases and expenditures. A higher score indicates respondents have greater impulsivity which results a lower self-control and vice versa.

Financial Literacy

Interval scale measurement was used to measure this independent variable, financial literacy. Seven questions were formulated to obtain the agreement level of smallholder farmers on the extent of their financial literacy. These questions were mainly adopted and modified from Hira and Loibl (2005) and Cude *et al.* (2006). A higher scale indicates respondents possess greater financial literacy and vice versa.

3.8 Summary of Method of Analysis

Table 3.6: Summary of Method of Analysis

Study concepts	Objective	Variables	Statistical Analysis/test
Savings Behaviour	To ascertain the savings behaviour of rural smallholder farmers in Karaga	• Saving or not • Forms of savings • Place of savings etc.	Descriptive Statistics
Demographic and Socio-Economic Factors	To investigate the influence of demographic and socio-economic factors on rural smallholder farmers' savings in Karaga district	• Age • Income • Sex • Marital status • Dependency • Lev. of Edu	Descriptive Statistics, Spearman Rank Correlation and Binary Probit Regression
Peer Influence	To determine how peer influence affect savings behaviour of rural smallholder farmers in Karaga district	• Smallholder farmers discussing savings among themselves. • AEAs engaging Smallholder farmers regarding savings. • Financial institution staff engaging smallholder farmers on savings.	Spearman Rank Correlation and Binary Probit Regression
Institutional Influence	To determine how institutional influence affect savings behaviour of rural smallholder farmers in Karaga district	• Availability • Access • Information	Spearman Rank Correlation and

			Binary Probit Regression
Self-Control and Savings Behaviour	To establish the relationship between self-control and savings behaviour of rural smallholder farmers in Karaga district	• Smallholder farmers being able to control expenditure. • Smallholder farmers being able to regulate desire. • Smallholder farmers controlling themselves to enable savings.	Spearman Rank Correlation and Binary Probit Regression
Financial Literacy On Savings Behaviour	To determine the influence of financial literacy on savings behaviour of rural smallholder farmers in Karaga district	• Smallholder farmers' knowledge on savings. • Smallholder farmers' knowledge on financial services. • Smallholder farmers' ability to keep record. • Smallholder farmers' ability to make profitable investment.	Spearman Rank Correlation and Binary Probit Regression

3.8 Conceptual Framework

The framework below is developed and serves as the foundation of this study. The framework is formulated to explain the relationship between the independent variables, thus financial literacy, peer influence, Institutional influence, self-control (social), income, age, sex, marital status, level of education, dependency (demographic and socio-economic) and dependent variable (saving behaviour). It's expected that each independent variable would independently affects the decision to save and a combination of the independent factors too is expected to also influence to save which is expected to ultimately influence savings behaviour. However, some of the independent factors are expected to have a causal influence among themselves which may further influence savings behaviour.

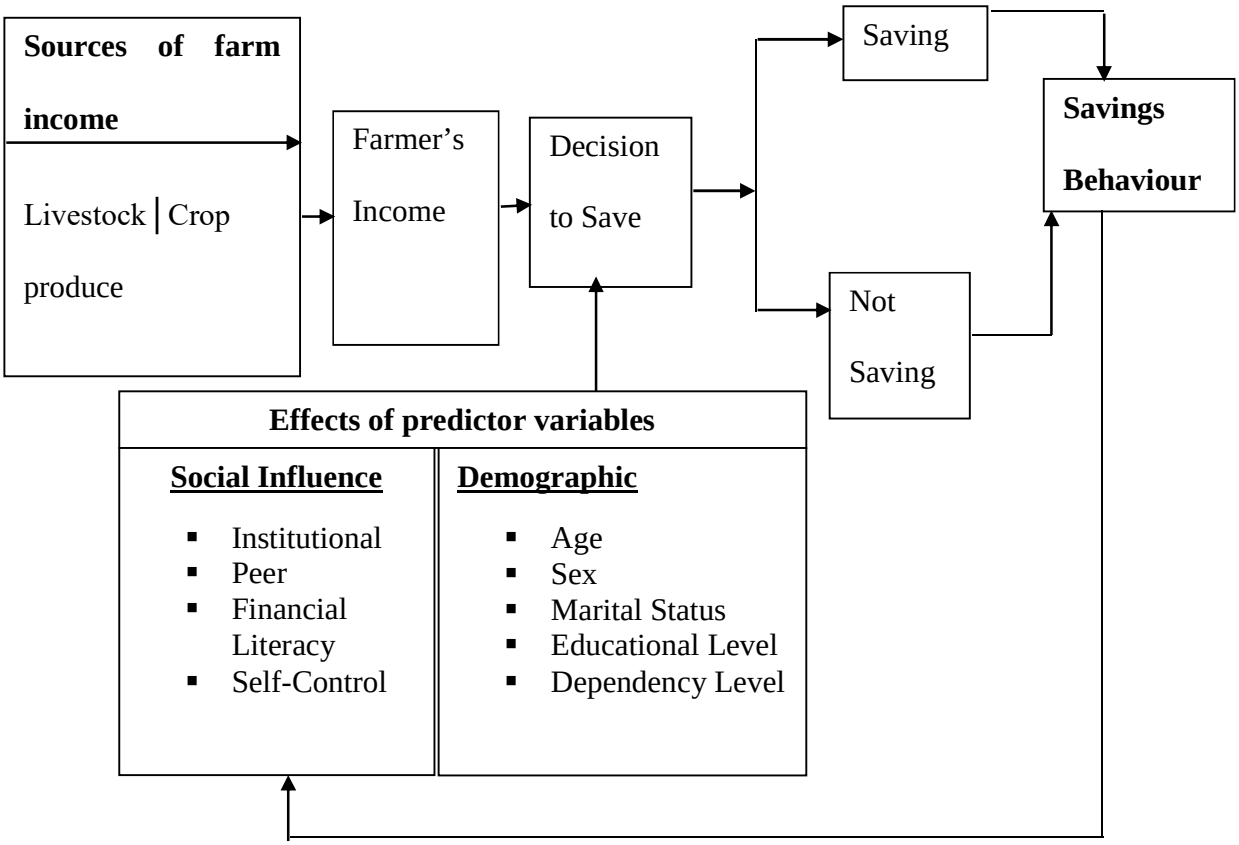

Figure 3.2: Conceptual framework for the study Source: Author's Construct, 2017.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents and discusses the findings of the study. The content of this chapter is in the order of demographic and socioeconomic characteristics of the respondents, description of constructs used in the Likert scale, spearman correlation analysis, savings behaviour of respondents, relationship between independent and dependent variables, the probit model results and conclusion.

4.1 Demographic and Socio-Economic Characteristics of Respondents

This section presents findings of selected social and economic characteristics of the sampled population. The demographic characteristics are age, sex, marital status, level of formal education, level of dependency and income.

4.1.1 Age of Respondents

The result showed that majority of the respondents were in the age group of 36-45 (33.70%). This was followed by range of 26-37(23.70%). The other ranges that followed were 15-25 (17.7%) and 46-55(17.0%) whiles the least respondents in terms of age were above age 56, constituting (8%) of the respondent population as shown in Figure 4.1. This implies that majority of the respondents are in the active labor population. This means that

only a few of the aged in the community are engaged in farming and the rest of them are likely to be dependents on the active and youthful population engaged in farming.

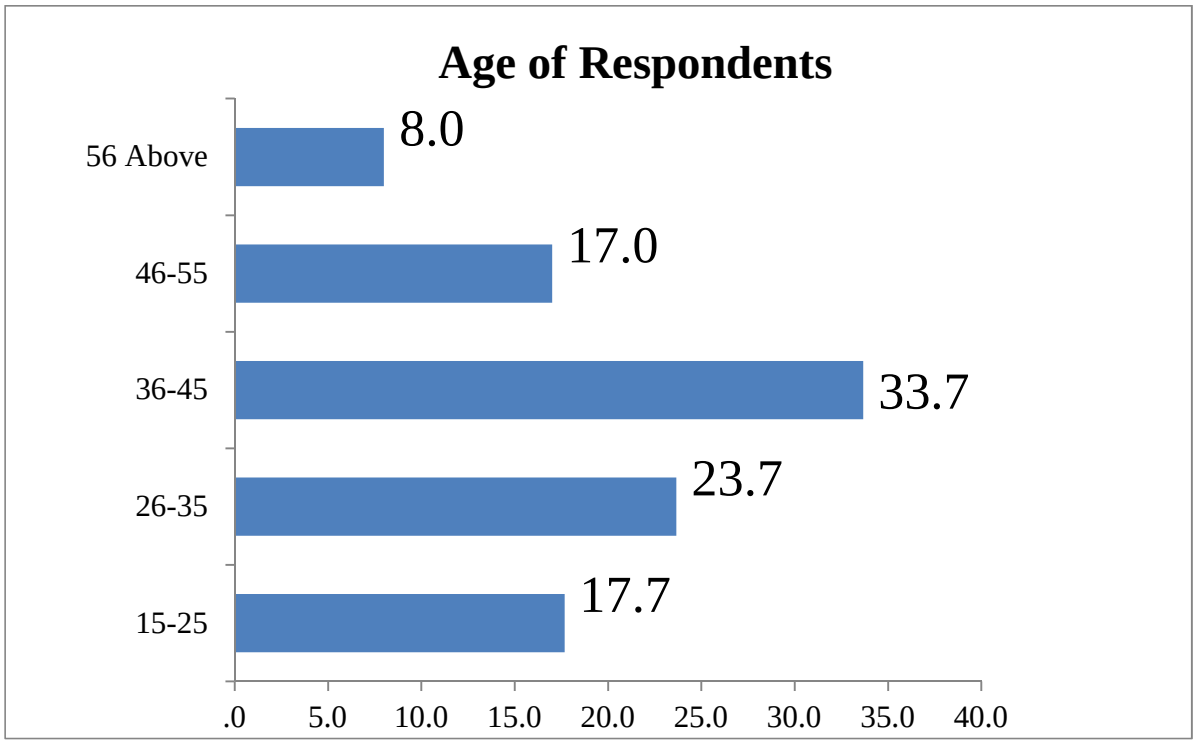

Figure 4.1: Distribution of respondents based on age

Source: Field Survey, March, 2017.

4.1.2 Gender of Respondents

The result showed that majority of respondents were males representing 60% of study population whiles the remaining 40% were females. The 60% of the respondents reflect male dominance of the farming occupation and it corroborates the male smallholder famers' role as head of households and owners of land in the community. Apart from the fact that women do not have enough responsibility of providing for the family, they are also challenged in terms of their access to productive farm lands. There is a myriad of

traditional and customary limitations of women's access to and ownership of land in the district. Figure 4.2 below gives a summary of gender distribution of respondents.

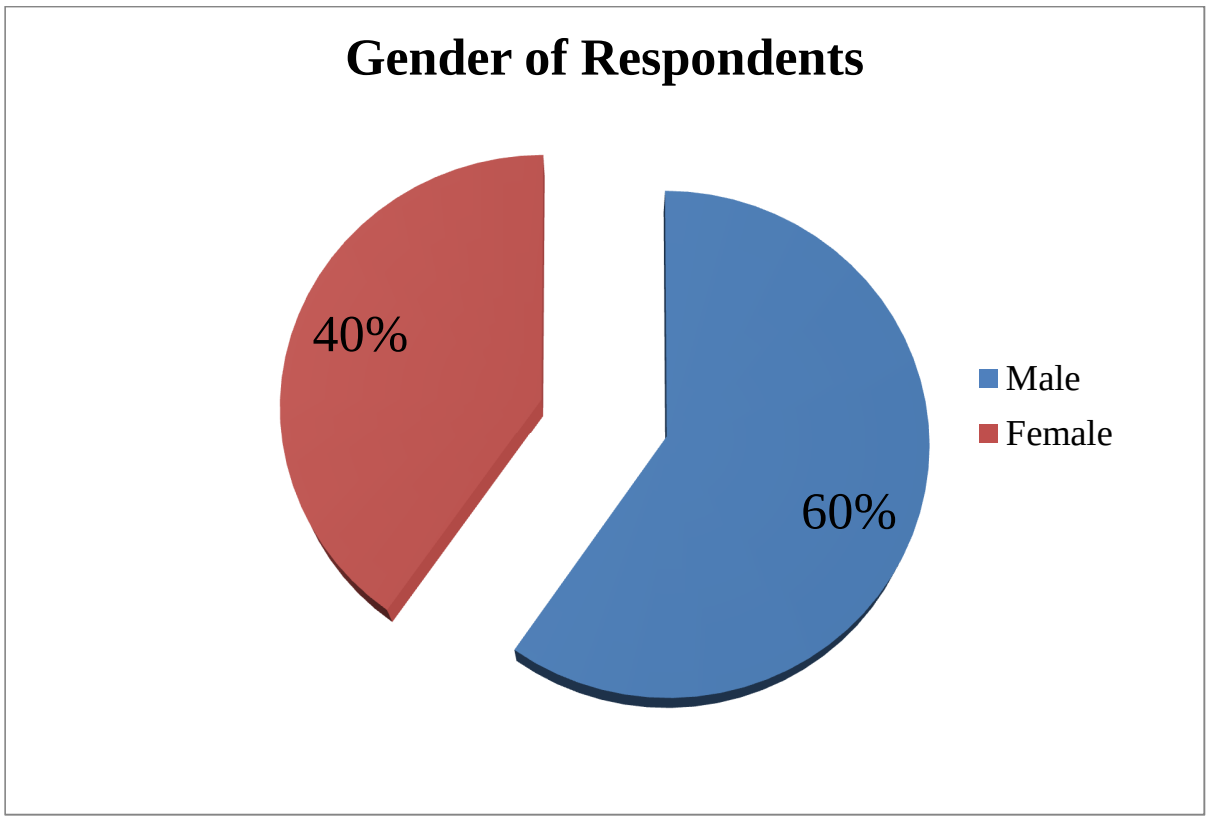

Figure 4.2: Distribution of Respondents Based On Gender

Source: Field Survey, March, 2017.

4.1.3 Marital Status of Respondents

The study reveals that majority of the respondents were married (89%), while 8.7% were single. Widowed and divorced respondent were the least of the respondent population with 1.3% and 0.7%, respectively. This implies that most of the respondents were matured and were in the position to give accurate responses to the questionnaire, while divorce (0.7%) as the least status reflected the religious and traditional values of the people. Most of them

were Muslims and their religion abhors divorce. Figure 4.3 presents the marital status of the respondents.

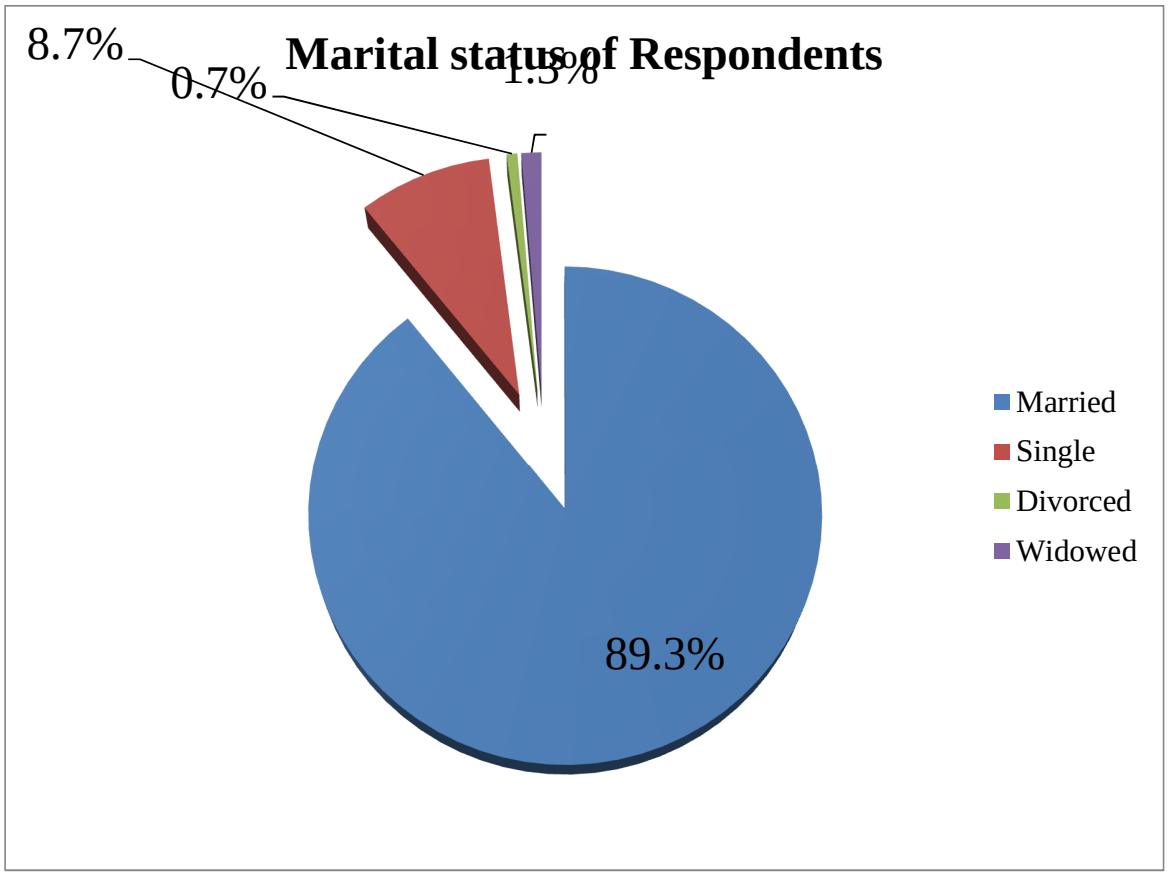

Figure 4.3: Distribution of Respondents Based On Marital Status.

Source: Field Survey, March, 2017.

4.1.4 Level of Education of Respondents

The study demonstrated that majority of respondents (69.3%) were not formally educated and 11% attained Senior High School, followed by 8% completing Tertiary education. Least of respondents completed Primary School and Junior High School at 7.7% and 4%, respectively. The dominance of the people with no formal education is expected, because this is a rural district and the focus of this study too is on smallholder farmers. Since the

smallholder farming is largely done by the uneducated, this result is therefore not surprising. Figure 4.4 represents the distribution of respondents based on educational attainment.

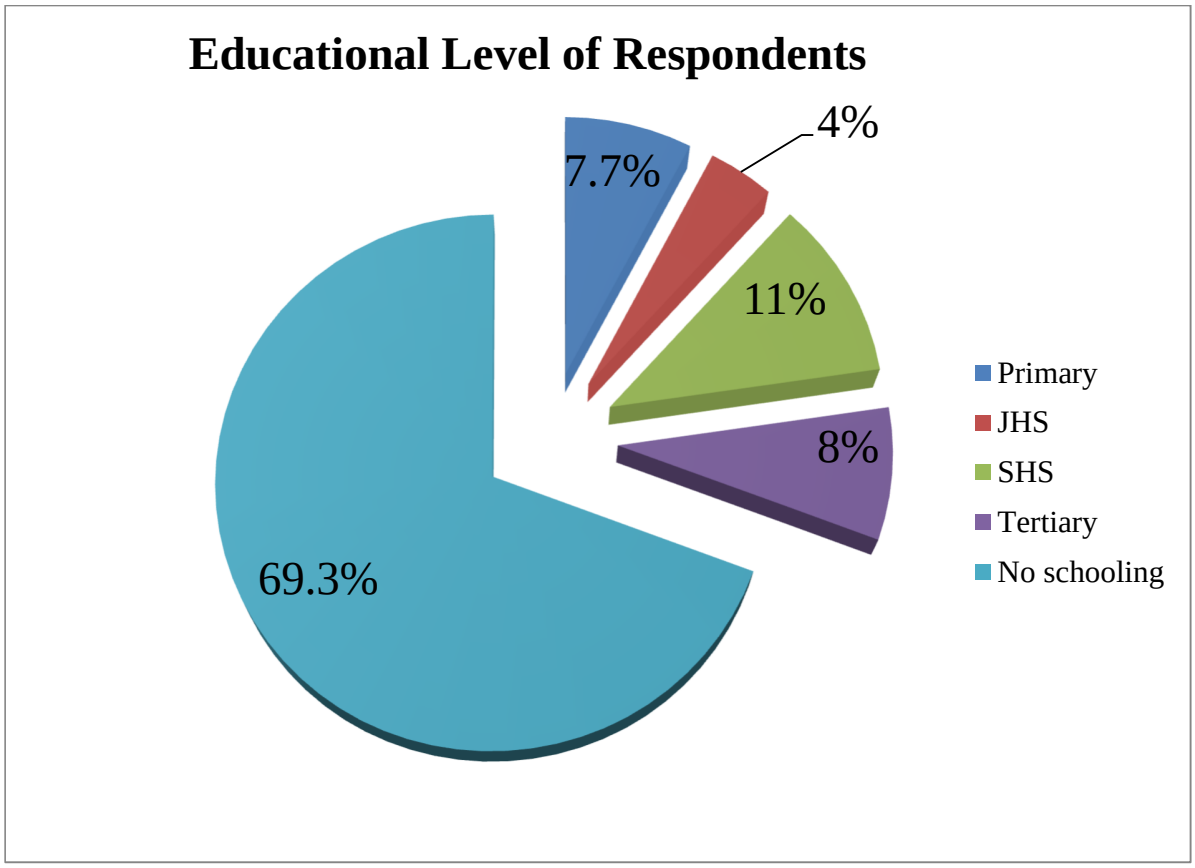

Figure 4.4: Distribution of Respondents Based On Educational Attainment.

Source: Field Survey, March, 2017

4.1.5 Number of Dependents

The study revealed that respondents who have between 6-10 dependents formed the majority of the population at 43.67%. This was followed by respondents who had between 0-5 dependents representing 40.67% and 13.33% representing respondents having 11-15 dependents. While 1.33% and 1% represented respondents having dependents between 16-

20, 20 and above respectively. The dependency dynamics largely portrays the true picture of a rural district in Northern Region. Rural people usually have more than one wife with unregulated birth pattern. However, there are instances a smallholder farmer will be a guardian to a lot of wards from family relations. From figure 4.5 presents the distribution of respondents based dependency.

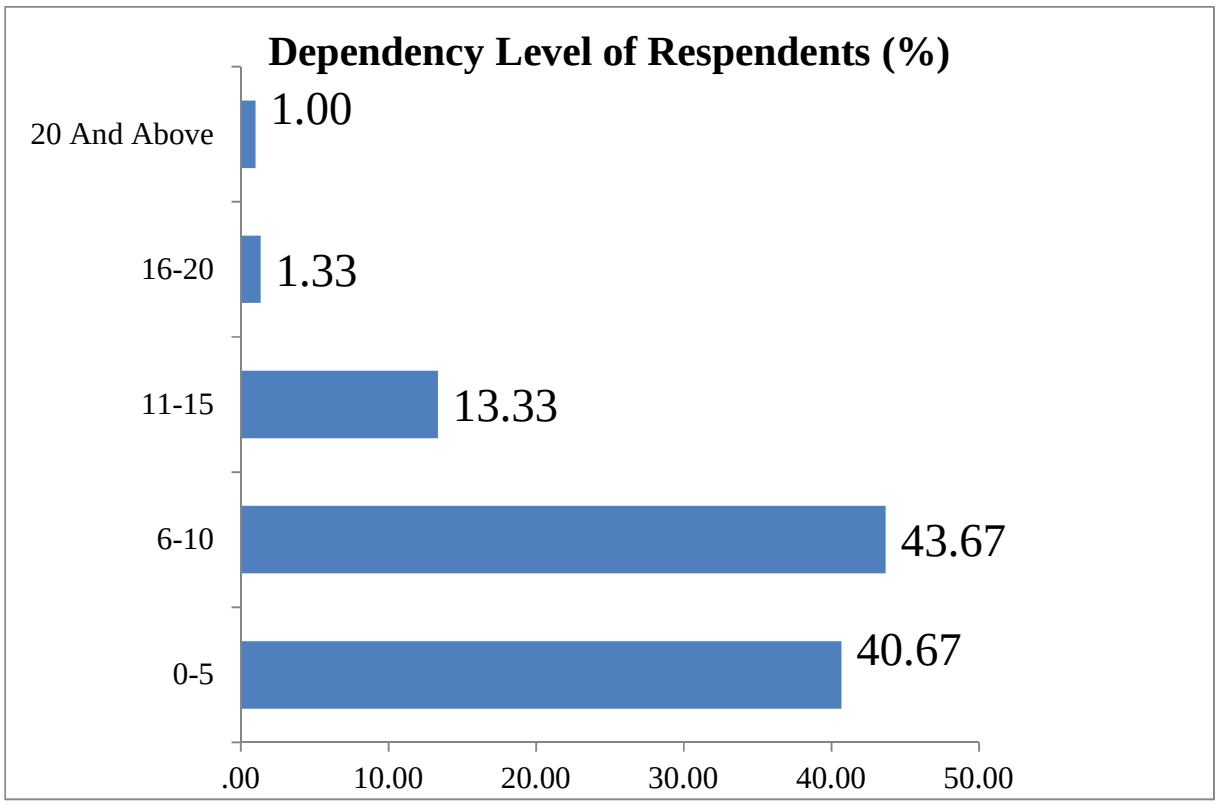

Figure 4.5: Distribution of respondents based on dependency

Source: Field Survey, March, 2017

4.1.6 Farming as A Major Occupation

The result demonstrates that majority of the farmers (88%) undertake farming as their major occupation whereas 12% do farming as a minor occupation whiles they engage in

other ventures as their major occupations. This is an expected outcome because the study sample was smallholder farmers and uphold farming as a major occupation. Figure 4.6 represents the distribution of respondents based on occupation.

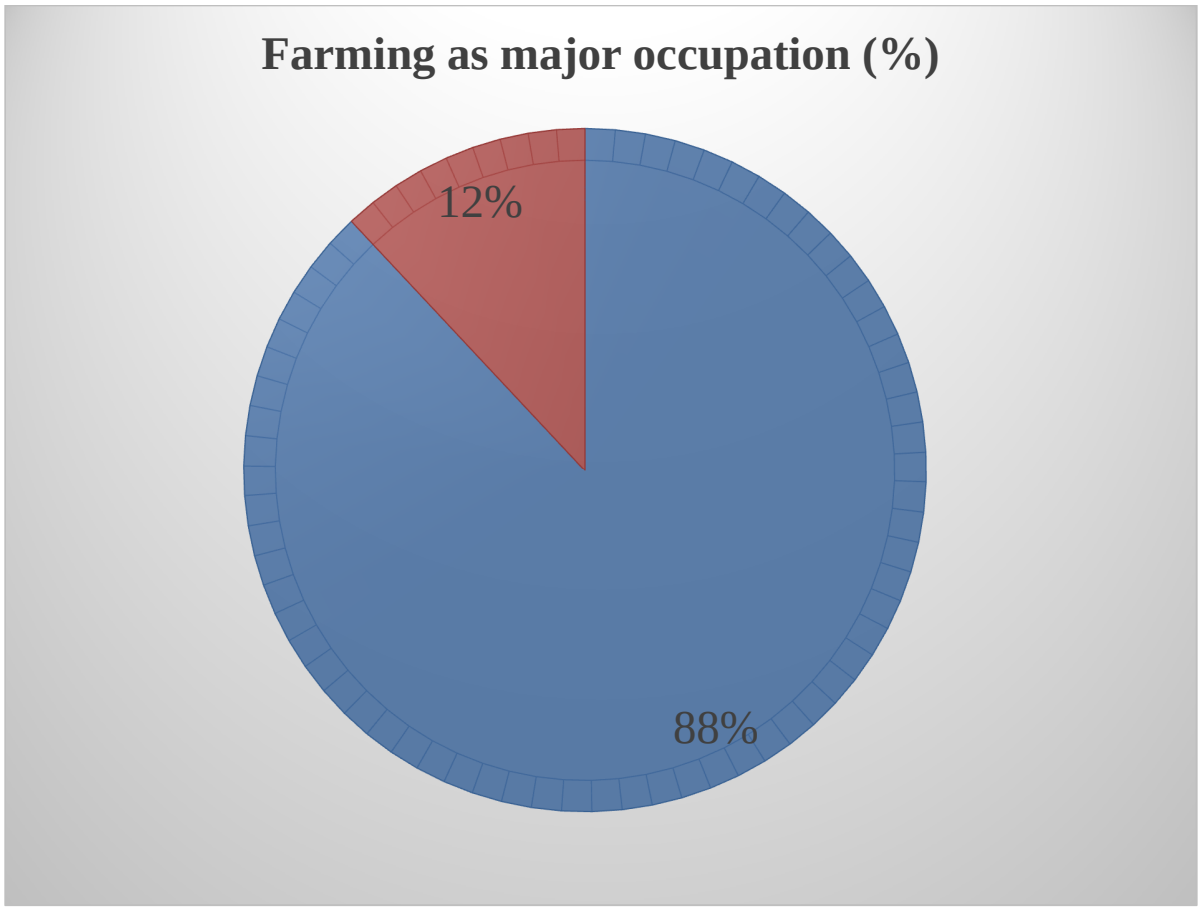

Figure 4.6: Distribution of Respondents Based On Occupation

Source: Field Survey, March, 2017.

4.2 Description of Constructs

This section looks at every construct on the Likert scale and relevant statistics. It presents the means, standard deviations, skewness and kurtosis of every construct on the Likert

scale. This is done considering the 300 responses to each question on the scale, it also presents the implication of every statistic used.

4.2.1 Peer Influence

Table 4.1 shows PI4 (4.77) and PI6 (1.89) as the highest and lowest mean scores, respectively. PII7 (1.482) has the highest standard deviation score, thus for that particular construct, the respondent's choice on the 5 point Likert scale are spread away from the mean whiles PI3 (0.576) has the lowest standard deviation score, which also indicates that responses for this particular question were clustered and closer to the sample mean. Also, apart from PI3 (-3.513) and PI4 (-4.096) which are negatively skewed, the rest of the statements are positively skewed. This means that the negatively skewed got less respondents strongly disagreeing to those particular questions or statements, whereas the positively skewed constructs had a lot of the respondents strongly agreeing to the statements. For the kurtosis, the distributions for PI1 (-1.435) and PI2 (-1.618) are light tailed (Platykurtic) since they are less than zero whereas the other constructs with kurtosis greater than zero are said to be heavy tailed and hence Leptokurtic.

So base on the descriptive analysis for this variable, the researcher can carefully conclude that the distributions for this variable was not normally distributed.

Table 4.1: Summary of Descriptives for Peer Influence

No	Items	Mean	Std. Dev.	Skewness	Kurtosis
PI1	I always discuss about money management issue (saving) with AEA.	2.21	1.43	0.575	-1.435
PI2	I always compare the amount of saving and spending with my spouse.	2.55	1.4	0.193	-1.618

PI3	I always spend my leisure time with friends.	4.74	0.576	-3.513	17.589
PI4	I always involve in money spending activities with friends.	4.77	0.658	-4.096	19.513
PI5	I interact with microfinance institution staff	1.9	1.283	1.167	0.141
PI6	I have been sensitized on savings by MF staff	1.89	1.333	1.255	0.141
PII7	I belong to a Village Savings and Loans Association (VSLA)	1.99	1.482	1.203	0.141

Source: Field Survey, March, 2017.

4.2.2 Institutional Influence

Table 4.2 shows II5 (4.89) and II3 (1.52) as the highest and lowest mean scores, respectively. II7 (1.413) has the highest standard deviation score, thus for that particular construct, the respondent's choices on the 5 point Likert scale are spread away from the mean while II5 (0.548) has the lowest standard deviation score, which also indicates that responses for this particular question were clustered and closer to the sample mean.

Also, apart from II4 (-4.313) and II5 (-4.096) which are negatively skewed, the rest of the statements are positively skewed. This means that the negatively skewed got less respondents strongly disagreeing to those particular questions or statements, whereas the positively skewed constructs had a lot of the respondents strongly agreeing to the statements. So base on the descriptive analysis for this variable, the researcher can carefully conclude that the distributions for this variable was not normally distributed.

For the kurtosis, the distributions for II1 (-1.432) and II2 (-1.425) are light tailed (Platykurtic) since they are less than zero whereas the other constructs with kurtosis greater zero are said to be heavy tailed and hence Leptokurtic.

So base on the descriptive analysis for this variable, the researcher can carefully conclude that the distributions for this variable was not normally distributed.

Table 4.2: Summary of Descriptive for Institutional Influence

No	Items	Mean	Std. Dev.	Skewness	Kurtoses
II1	I hold a bank account	2.42	1.33	0.565	-1.432
II2	I have been trained to save by AEA	2.22	1.46	0.474	-1.425
113	I belong to a mandatory saving group	1.52	1.6	0.193	1.618
II4	I have been sensitized by NGO to save	4.74	0.576	-4.313	15.549
II5	I save to qualify for a loan facility	4.89	0.548	-4.162	17.523
II6	I have a microfinance in my community	1.7	1.233	1.172	0.122
II7	There is pride in saving with a bank	1.90	1.413	1.243	0.121

Source: Field Survey, March, 2017.

4.2.3 Self Control

Table 4.3 shows SC7 (3.15) and SC6 (1.63) as the highest and lowest mean scores respectively. SC10 (1.753) has the highest standard deviation score, thus for that particular construct, the respondent's choices on the 5 point Likert scale are spread away from the mean whiles SC6 (0.673) has the lowest standard deviation score, which also indicates that responses for this particular question were clustered and closer to the sample mean.

Also, apart from SC7 (-0.392) which is negatively skewed, the rest of the statements are positively skewed, which means that scores are clustered to the left at the low values. This means that the negatively skewed got less respondents strongly disagreeing to those particular questions or statements, whereas the positively skewed constructs had a lot of the respondents strongly agreeing to the statements.

For the kurtosis, SC7 (-1.302), SC9 (-1.244) and SC10 (-1.43) are the only negatively skewed, the rest are positively skewed indicating that, the distributions for SC7 (-1.302), SC9 (-1.244) and SC10 (-1.43) are light tailed (Platykurtic) since they are less than zero whereas the other constructs with kurtosis greater zero are said to be heavy tailed and hence Leptokurtic.

So base on the descriptive analysis for this variable, the researcher can carefully conclude that the distributions for this variable was not normally distributed.

Table 4.3: Summary of descriptive for Self-Control

No	Items	Mean	Std. Dev.	Skewness	Kurtosis
SC1	I don't save because I think it's too difficult and hard to save	2.02	0.979	1.308	1.33
SC2	I enjoy spending on things that are not really practical and useful	1.77	0.645	1.38	5.396
SC3	When I get money, I spend it immediately (one to two days)	1.92	1.008	1.323	1.177
SC4	I always fail to control myself from spending money	1.91	0.937	1.343	1.54
SC5	Once I have money, I always have the urge to spend	1.99	1.026	1.216	0.79
SC6	I always want immediate consumption than later	1.63	0.673	1.52	4.918

SC7	When I set saving goal for myself, I rarely achieve them	3.15	1.308	-0.392	-1.302
SC8	I am attracted by lure	1.92	1.109	1.357	1.005
SC9	I don't save because I don't have enough	2.32	1.655	0.73	-1.244

Source: Field Survey, March, 2017.

4.2.4 Financial Literacy

Table 4.4 shows FL3 (4.28) and FL6 (2.35) as the highest and lowest mean scores respectively. FL6 (1.467) has the highest standard deviation score, thus for that particular construct, the respondent's choices on the 5 point Likert scale are spread away from the mean whiles FL3 (0.839) has the lowest standard deviation score, which also indicates that responses for this particular question were clustered and closer to the sample mean.

Also, apart from FL6 (0.7) which is positively skewed, the rest of the statements are negatively skewed. This means that the positively skewed got less respondents strongly disagreeing to those particular questions or statements, whereas the negatively skewed constructs had less of the respondents strongly agreeing to the statements.

For the kurtosis, FL2 (-0.392), FL4 (-1.394) and FL6 (-1.062) are the only negatively skewed, the rest are positively skewed indicating that the data is peaked at the middle.

For the kurtosis, FL2 (-0.392), FL4 (-1.394) and FL6 (-1.062) are the only negatively skewed, the rest are positively skewed indicating that, the distributions for FL2 (-0.392), FL4 (-1.394) and FL6 (-1.062) are light tailed (Platykurtic) since they are less than zero

whereas the other constructs with kurtosis greater zero are said to be heavy tailed and hence Leptokurtic.

So base on the descriptive analysis for this variable, the researcher can carefully conclude that the distributions for this variable was not normally distributed.

Table 4.4: Summary of descriptive for Financial Literacy

No	Items	Mean	Std. Dev.	Skewness	Kurtoses
FL1	I have better understanding of how to invest my money.	3.9	0.846	-1.381	1.922
FL2	I have better understanding of how to manage my credit use.	3.61	1.211	-0.88	-0.392
FL3	I have a very clear idea of my financial needs during old age.	4.28	0.839	-1.969	5.26
FL4	I have the ability to maintain financial records for my income and expenditure.	3.11	1.345	-0.181	-1.394
FL5	I have little or no difficulty in managing my money.	3.84	0.95	-1.132	0.691
FL6	I have the ability to prepare my own expenditure budget.	2.35	1.467	0.7	-1.062
FL7	I have the ability to make a profitable investment	3.78	1.115	-1.33	0.973

Source: Field Survey, March, 2017.

4.4 Savings Behaviour of Rural Smallholder Farmers in Karaga District.

4.4.1 Savings

The study results demonstrate that out of a smallholder respondent population of three hundred (300), 223 small holder farmers representing 74.30% were engaged in some savings. The remaining 77 small holder farmers representing 27.70% did not engage in any savings. Table 4.6 presents savings of smallholder farmers in Karaga District.

Table 4.6: Do Respondents Save?

	Frequency	Percentage (%)
Yes	223.00	74.30
No	77.00	25.70
Total	**300.00**	**100.00**

Source: Field Survey, March, 2017.

4.4.2 Forms of Savings

From table 4.7, it's revealed that smallholder farmers who save in cash forms, formed the majority of small holder farmers engaged in savings. This category was 157 smallholder farmers representing 52% of respondents, 38 smallholder farmers representing 12.67% engaged in both cash and non-cash forms of savings, while 28 smallholder farmers represented 9.33% non-cash savers. The remaining 77 people representing 25.67% did not engage in any form of savings, hence they are non-savers.

Table 4.7: Forms of savings

Form of savings	Frequency	Percentage (%)
Cash	157	52.33
Non cash	28	9.33
Both	38	12.67
Don't save	77	25.67
Total	**300**	**100.00**

Source: Field Survey, March, 2017.

4.4.3 Forms of Cash Savings

The results revealed that 73 smallholder farmers representing 24.33% owned shares in Village Savings and Loans Association (VSLAs) forming a majority of cash savers. Whiles 66 smallholder farmers representing 22% owned savings accounts at different commercial

banking institutions, 105 smallholder farmers forming a huge 35% did not save in cash. This group of 35% comprise smallholder farmers who save in non-cash forms and those who do not engage in any form of savings at all. Table 4.8 presents the forms of cash savings of smallholder farmers.

Table 4.8: Forms of Cash Savings

Forms of cash savings	Frequency	Percentage (%)
Savings Account	66	22.00
Shares	73	24.33
Contribution	56	18.67
Don't save cash	105	35.00
Total	**300**	**100.00**

Source: Field Survey, March, 2017.

4.4.4 Place of Cash Savings

In the district, smallholder farmers who do cash savings have an opportunity to save with commercial financial institutions, informal associations like the Village Savings and Loans Association, Susu groups or even save at home. As presented in Table 4.9, among the respondents who saved in cash, savers in Village Savings and Loans Association were 73 (24.33%), followed by 63 (21%) of smallholder farmers those who held savings accounts with commercial banks. Next to these two were smallholder farmers who kept cash at home as savings, they were 21 (7%) of the savers.

The others were smallholder farmers who belonged to rotating and accumulating savings and credit associations ROSCA/ASCA and SUSU savers, both forming 18 (6%) and 18 (6%) respectively. The least place of cash savings was those who save on MTN mobile money constituting 2 (0.67%) of the cash savers' population of smallholder farmers.

Table 4.9: Place of Cash Savings

Place of cash savings	Frequency	Percentage (%)
VSLA	73	24.33
ASCA/ROSCA	18	6.00
Rural Bank	63	21.00
Susu	18	6.00
Keep cash at home	21	7.00
Mobile money	2	.67
Don't save cash	105	35.00
Total	**300**	**100.00**

Source: Field Survey, March, 2017.

4.4.5 Frequency of Cash Savings

The results in table 4.10 reveals that majority 110 (57.29%) of smallholder farmers who save in cash do so on weekly basis. Next to that are smallholder farmers who save monthly, representing about 28.65%. Smallholder farmers who saved daily and fortnightly constituted 8.85% and 2.08%, respectively. The least frequently save option was those who saved occasionally, they were 6, representing 3.13% of the smallholder cash saver population.

The group savings are mobilized during weekly group meetings of Village Savings and Loans Association and ASCA/ROSCA meetings. So the weekly savers are those who belonged to these groups.

Table 4.10: Frequency of Cash Savings

Frequency of cash savings	Frequency	Percentage (%)
Daily	17	8.85
Weekly	110	57.29
Fortnightly	4	2.08
Monthly	55	28.65
Occasional	6	3.13
Total	**192**	**100.00**

Source: Field Survey, March, 2017.

4.4.6 Savings Amount

On the amounts smallholder cash savers save, the minimum amount was GH¢2.00 for those saving daily and weekly whiles the maximum went beyond GH¢ 40.00. for monthly savers. Table 4.11 revealed that smallholder farmers who saved cash ranging between Ghc2-10 formed majority of the cash saver population at 95(49.22%). Second to that were those who saved between Ghc11-20, they stood at 37(19.17%). Also, smallholder farmers who saved cash ranging from Ghc21-30 and Ghc 40 and above stood at 23(11.92%) and 21(10.88%) respectively. The least saved amount range was Ghc31-40 which constituted 17 (8.81%) of the smallholder cash saver population. Smallholder farmers who belonged to VSLAs saves in the form of shares, which the cost of one share is Ghc2.00 and each member has the chance to buy between one to five shares at sitting, hence the range of Ghc 2.00 to Ghc 10.00.

Table 4.11: Savings Amount

Savings Amount (GH¢)	Frequency	Percentage (%)
2- 10	95	49.22
11-20	37	19.17
21-30	23	11.92
31-40	17	8.81
40 and above	21	10.88
Total	**193**	**100.00**

Source: Field Survey, March, 2017.

4.4.7 Forms of Non-Cash Savings

With regards to the forms of non-cash savings engaged in by smallholder farmers. From table 4.12, it can be seen that out of the 67 smallholder farmers who do non-cash savings, 60 (90.90%) saved in grains whiles the remaining 6 (9.10%) saved in the form of rearing

livestock. So from the table, one can conclude that majority of non-cash savers saved in grain whiles a paltry saved in livestock. Smallholder farmers who save in grains were more because the farmers are mainly crop farmers rather than livestock farming. These grain savers save part of their yearly harvest and some also buy from the market when prices are low and stored in anticipation of increase in price. The minimal engagement of the smallholder farmers in the rearing of livestock was attributed to theft and death due to the unavailability of adequate veterinary officers.

Table 4.12: Forms of Non-Cash Savings

	Frequency	Percentage (%)
Grains	60	90.90
Livestock	6	9.10
Total	**66.00**	**100.0**

Source: Field Survey, March, 2017.

4.4.8 Frequency of Non-Cash Savings

On the account of frequency of non-cash savings, table 4.13 shows that 62 (95.38%) of smallholder farmers saved yearly whiles 2 (3.08%) and 1 (1.54%) saved on monthly and weekly bases respectively. Most smallholder farmers saved yearly because of the nature of their occupation. They save from their harvest, so it is expected that it is done yearly. Even smallholder farmers who buys grains to store usually buy at the end of harvest when prices are relatively low. The yearly savers formed a majority because of the seasonal (yearly) nature of the profession. Except a few of the smallholder farmers who trade weekly and monthly in the open market.

Table 4.13: Frequency of Non-Cash Saving

Frequency of non-cash savings	Frequency	Percentage (%)
Weekly	1	1.54
Monthly	2	3.08
Yearly	62	95.38
Total	**65**	**100.00**

Source: Field Survey, March, 2017.

4.4.9 Most Saved Season

Table 4.14 demonstrates that 191 (86.43%) of smallholder farmers save more in the off-farm season whiles 22 (9.95%) indicated they save more in both farming and off-farming season. Also, 8 (3.62%) indicated that they save more in farming season than other seasons. It turned out that majority of the farmers saved most in the dry season because of the nature of their profession as farmers. They do a lot investment on their farms during the farming season and only get to save money or grains after the season's harvest.

Table 4.14: Most Saved Season

Most saved season	Frequency	Percentage (%)
Farming season	8	3.62
Off-farm Season	191	86.43
Both	22	9.95
Total	**221**	**100.00**

Source: Field Survey, March, 2017.

4.5 Relationship between Peer Influence, Institutional Influence, Self-Control, Financial Literacy and Savings Behaviour.

4.5.1 Spearman Correlation

Table 4.15 reveals that all independent variables (social) have a positive association with the dependent variable (Savings Behaviour). FL has the strongest relationship with SB of (rho=.731), followed by SC (rho=.501) whereas PI and II have the least association of (rho=.473) and (rho=.421) respectively. According to Malhorta (2010) it's enough to test for its significance on a dependent variable since its p-values are less than 0.05.

Table 15: Spearman Correlation

		Savings Behaviour
Peer Influence (IV1)	Spearman's Correlation Coefficient	
		.473
	sig. (2- tailed)	.000**
Institutional Influence (IV2	Spearman's Correlation Coefficient	.421
	sig. (2- tailed)	.000**
Self-control (IV3)	Spearman's Correlation Coefficient	.501
	sig. (2- tailed)	.000**
Financial Literacy (IV4)	Spearman's Correlation Coefficient	.731
	sig. (2- tailed)	.000**
Savings Behaviour (DV)	Spearman's Correlation Coefficient	1
	sig. (2- tailed)	

Source: Field Survey, March, 2017.

4.6 Estimated Coefficients of Effects of Variables on Rural Smallholder Farmers' Savings Behaviour from the Binary Probit Regression Model

Table 4.16: Probit Regression Coefficients

Savings Behaviour	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
Age	-0.038	-0.038	-0.360	0.717	-0.245	0.168
Sex	0.742	0.237	3.130	0.002**	0.278	1.207
Level of Education	0.057	0.088	0.650	0.518	-0.115	0.230
Marital Status	0.657	0.338	1.950	0.044*	-0.004	1.320
Level of Dependency	-0.083	0.149	0.560	0.026*	-0.210	0.376
Income	0.004	0.001	3.300	0.001**	0.001	0.001
Peer Influence	0.942	0.261	3.600	0.000**	0.429	1.455
Institutional Influence	0.054	0.079	0.610	0.035*	-0.101	0.351
Self-Control	0.440	0.179	2.460	0.014*	0.792	0.089
Financial Literacy	1.128	0.180	6.240	0.000**	0.773	1.482
Cons.	-7.141	1.424	-5.010	0.000	-9.933	-4.348

Number of observations = 300

Log likelihood= -88.68

Wald Chi (9) = 102.2

Prob > Chi (2) = 0.000

Pseudo R^2 = 0.8410

*=Significant at 5% significance level, **Highly significant at 5% significance level

Source: Field Survey, March, 2017.

4.6.1 Effects of Predictor Variables On Rural Smallholder Farmers' Savings Behaviour

The result from the probit analysis in the table above indicates that most of the explanatory variables are significant at 5%. The significant variables are sex, marital status, dependency ratio, income, peer influence, institutional influence, self-control and financial literacy. However, age and level of formal education were found not to be significant.

Age: Though Ando and Modigliani's (1963) life cycle hypothesis established a relationship and for that matter influence of age on savings behaviour, this study hasn't found same. The probability value (0.717) of age does not show any significant relationship and for that matter a definite conclusion cannot be drawn.

Level of formal education: Although there is literature abound, especially from the quarters of Burney and Khan (1992), Annamaria, (2000) and Nwibo (2013) who have all done studies to establish the positive relationship between level of formal education and savings behaviour, this study reveals no influence of level of formal education on savings behaviour, considering the probability value of (0.518). This finding is attributed to the fact that the respondents were smallholder farmers with most of them without any form of formal education, so the data was skewed in this regard.

Marital Status: The probability of marital status influencing a rural smallholder farmers' savings behaviour was found to be significant (0.044) at 5%. The positive coefficient indicates a positive relationship between marital status and savings behaviour. It then

means that being married increases your likelihood to save. This finding is consistent with Collins' (2009) who posited that marriage is important for performing savings since marriage is morally and socially responsible for collective interest and plays an important role in financial planning. However, Mosk (2010) found that widowed households save more than married and unmarried household, because they face unanticipated and extra risk of life such as having to raise kids alone.

Sex: The probability of sex influencing a smallholder farmer's savings behaviour was found to be significant at the 5% level of significance. This statistic indicates that male smallholder farmers save more than female smallholder farmers. This confirms an earlier study by Bersales and Mapa (2006) that male headed households are better savers because the female has no power to control income even their own income. This, however, contradicts the results of Chowa (2008) who posited that women and men are successful savers, except that women save more than their male counterparts. Interestingly, some researchers have also concluded that there is no gender difference in savings and investment behaviour.

Level of Dependency: From the table below, dependency ratio is negatively signed and significant at 5% significant level. Thus, an increase in family size of a smallholder farmer will result to a decrease in the savings of such a smallholder farmer. This finding conforms to Kibet *et al.* (2009) who posited that an increase in household size will bring about increase in dependency ratio and as such is bound to cause a decline in saving, while a decline in dependency ratio will result in increase in saving. Moreover, Rahman (2010)

also studied the demographic and other influences on long term saving behaviour in India and came up with findings that large family size had depressing effects on long term savings rate. Rahman (2010) conclusion is not different from Haruna (2011) who reported household size to have an inverse and substantial effect on household savings. This is so because most of the smallholder farmers solely rely on farming for survival, so the burden of dependents is expected to have a depressing effect in their incomes and subsequent savings.

Income: Income is also significant at 5% level of significance. The positive coefficient of income indicates a positive relationship between income and savings. This finding is in consonance with a myriad of literature on the influence of income on savings behaviour. For instance, Nwibo (2013) found out that increase in the income level of a household will bring about increase in the saving and investment capacity as increasing income will result to surplus that will be saved and invested after consumption expenditure has been made. Further, Kibet *et al.* (2009) concluded that household income is a significant predictor of savings among rural farmers, entrepreneurs, and teachers. A study done in India by Athukorala and Sen, (2004) and Agrawal, Sahoo, and Dash, (2007) also confirmed income as a significant predictor of improved savings.

Peer Influence: The probability value of peer influence is positive and significant at 5% of significance. The positive coefficient of this variable implies that the more exposed a smallholder farmer is to interaction with his/her peers and stakeholder institutions the more he is likely to save. Similarly, the more reserve and non-interactive a smallholder farmer is the lesser likelihood of savings. Peer influence, therefore, has a positive

relationship with savings behaviour. This interesting finding goes to reaffirm the findings of Duflo and Saez (2001) that members of the same group share a common environment, which may influence their behaviour. The reason is that people with similar preferences tend to belong to the same group. Both of these factors generate a correlation between group behaviour and individual behaviour which consequently affect their saving behaviour.

Institutional Influence: The positive and significant coefficient of this variable implies that the more access smallholder farmers' have to financial institutions and information about savings, the more they are likely to save and the less access to institutions and financial information, the lesser their likelihood of savings.

Self-control: The tendency of self-control to influence savings behaviour was significant at the 5% confidence level. The positive sign in front of the coefficient for self-control in the binary probit analysis shows a positive relationship between self-control and savings behaviour. This means that the more a smallholder farmer is able to identify and regulate his/her self from immediate consumption, the higher the probability of saving and a poor ability of a smallholder farmer to control consumption the lesser the likelihood of savings. This revelation is in consonance with Esenvalde (2010) empirical evidence that self-control was positively associated with saving behaviour. Lim, Sia, and Gan (2011), also confirmed a significant impact of self-control on saving behaviour.

Financial literacy: This social variable was also highly significant (0.000) at 5% with a positive relationship to savings behaviour of rural smallholder farmers, as it maintains a

positive coefficient in the binary probit analysis. This positive relationship means that the more a smallholder farmer's ability to make informed judgment and take effective decisions regarding the use and management of money, the higher the tendency of the smallholder farmer to save. In the same vain, the poor judgment of a smallholder farmer regarding the use and management of money there is a lesser tendency of the smallholder farmer to save. Financial literacy will enable smallholder farmers to take prudent financial decisions that will improve their financial security. This finding confirms Hilgert, Hogarth and Beverly (2003), Sabri and MacDonald (2010) and Delafrooz and Laily (2011) revelation of the existing significant influence financial literacy has on savings behaviour.

4.7 Marginal Effects of Explanatory Variables on rural smallholder farmers' savings behaviour

Table 4.17: Marginal Effects of Probit Regression Coefficients

Variables	dy/dx	Std. Err.	z	P>|z|	[95% Conf.	Interval]	X
Age	-0.0065967	0.0182	-0.36	0.717	-0.042261	0.029067	2.74
Sex	0.0181007	0.04548	2.82	0.002**	0.038955	0.217246	1.40333
Level of Education	0.0098367	0.01521	0.65	0.518	-0.019982	0.039656	4.27333
Marital Status	0.1134343	0.05635	2.01	0.044*	0.002992	0.223877	1.14
Level of Dependency	-0.0143203	0.02554	-0.56	0.026*	0.035731	0.064371	1.78333
Income	0.0000779	0.00002	3.61	0.000**	0.000036	0.00012	1260.2
Peer Influence	0.1625545	0.04436	3.66	0.000**	0.07561	0.249499	2.86714
Institutional Influence	0.0214531	0.03521	0.61	0.035*	0.00715	0.221235	2.34
Self-Control	0.0760081	0.03549	2.14	0.032*	0.145574	0.006442	2.10233
Financial Literacy	0.194546	0.03776	5.15	0.000**	0.120534	0.268558	3.55571

Source: Field Survey, March, 2017.

4.7.1 Marginal Effects of Explanatory Variables on rural smallholder farmers' savings behaviour

The table above shows the change in the dependent variable for any change in any of the significant independent variables. The discussion seeks to illustrate the magnitude of change in the dependent variable that is accounted for by the respective independent variables.

Level of Dependency: Further result from marginal effect analysis also shows that, an increase in dependency level of household heads by one member will have the probability of decreasing their ability to save by 1.40%.

Marital Status: Further result from marginal effect analysis also shows that being married increases a smallholder farmers' probability or likelihood to save by 11.30%. This was attributed to the dual income streams of married smallholder farmers. These smallholder farmers pool resources together for the household.

Sex: Further result from marginal effect analysis also shows that being a male increases a smallholder farmers' probability or likelihood to save by 1.80%. This was attributed to the nature of farming as a main occupation for men and also men's ownership of land as a resource for farming.

Income: Further result from marginal effect analysis also shows that, an increase in income level of household heads by GH¢1 will have the probability of increasing their ability to save

by 0.0000779. It means that rural smallholder farmers with higher income have the probability to save than those with lower income. This confirms the direct positive effect of income on savings behaviour.

Peer Influence: Further result from marginal effect analysis also shows that an increase in interaction among smallholder farmers and increase in stakeholder engagement about savings will increase the probability of smallholder farmers to save by 16.30%.

Self-Control: Further result from marginal effect analysis also shows that any unit increase in rural smallholder farmers' ability to identify and regulate desires will increase their probability to save by 7.60%.

Institutional Influence: Further result from marginal effect analysis also shows that an increase access and availability of financial services of smallholder farmers and increase in stakeholder institutional engagement about savings will increase the probability of smallholder farmers to save by 2.1%. This confirms the position of researchers like Cagan (1965) and Carroll and Summers (1987) that the availability of institutionalized saving opportunities encourages savings because it brings to bear the needed awareness on savings and to guide people to make savings decisions.

Financial Literacy: Further result from marginal effect analysis also shows that, an increase in financial literacy status of smallholder farmers has the potential to increasing their ability to save by 19.50%.

4.8 Conclusion

In this chapter, respondents' demographic characteristics have been analyzed via frequencies and charts. A Probit model was used to establish the relationship between demographic variables (age, sex, marital status, education, dependency and income) and social variables such as peer influence, institutional influence, self-control and financial literacy and savings behaviour. Central tendency measurements were conducted on all the four independent social variables. Also, reliability test like Cronbach Alpha and Multicollinearity have proved that all the construct measures of this study can generate consistent results. Meanwhile, Pearson Correlation Analysis has also shown that there is a significant relationship between the four social independent variables and saving behaviour whiles the Probit results revealed the influence of all the independent variable on savings behaviour in this study.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the study, conclusions and recommendations. The summary and conclusions are presented in section 5.2.0 and 5.3.0 respectively. Section 5.4.0 presents the policy recommendations based on the findings of the study. Suggestions for future research are also presented in section 5.5.0

5.2 Summary

To establish the predictors of savings behaviour of rural smallholder farmers in Karaga district of northern region. The specific objectives were: first, to describe the savings behaviour of rural smallholder farmers in Karaga. The rational of this objective was to find out if smallholder farmers in Karaga save or not. Data was collected through survey and analyzed using descriptive statistics to establish the following indicators: If they save, in what forms do they save, thus cash forms or non-cash forms. If they saved in cash form the study sought to find out if smallholder farmers held bank account, belonged to VSLA, ASCA/ROSCA, mobile money or even saved cash at home and for non-cash savers, if they saved in grains or livestock. The major findings were that most smallholder farmers do save; some of them save in cash whiles others save in grains and livestock. Also, most of the women belonged to VSLAs and whiles some of the smallholder farmers held bank accounts, others kept cash at home.

The second objective of the study was to investigate the influence of demographic and socio-economic factors on rural smallholder farmers' savings in Karaga district. The rationale behind this objective was to find out if demographic and socio-economic variables such as age, sex, marital status, dependency, level of education, peer influence, institutional influence, self-control and financial literacy have any form of influence on savings behaviour of smallholder farmers in the district. Again, data was collected and analyzed using Binary Probit Regression to determine their significance on savings behaviour.

The third objective was to determine how peer and institutional influence affect savings behaviour of rural smallholder farmers in Karaga district. The reason for this objective was to find out if social variable such as peer and institutional influence (PII) has any effect or influence on savings behaviour (SB) of smallholder farmers in the district. Data collected through survey on a five (5) point Likert scale was analyzed using Spearman correlation to establish a relationship, a positive relationship between PII and SB was established, though the weakest relationship among the three.

Fourthly, establish the relationship between self-control and savings behaviour of rural smallholder farmers in Karaga district. The reason for this objective was to find out if social variable such as Self-Control (SC) has any effect or influence on savings behaviour (SB) of smallholder farmers in the district. Data was collected through survey on a ten (10) item Likert scale; this was analyzed using Spearman Correlation to establish the relationship. The analysis revealed a positive and significant relationship or association between SC and SB.

The last objective was to determine the influence of financial literacy on savings behaviour of rural smallholder farmers in Karaga district. The rationale behind this objective was to find out if social variable such as Financial Literacy (FL) has any effect or influence on savings behaviour (SB) of smallholder farmers in the district. Data was collected through a survey using a seven (7) item Likert Scale which was further analyzed using a Spearman Correlation to determine the influence of financial literacy. The Spearman Correlation established a positive and significant relationship between FL and SB. The FL relationship is the strongest among other three (3) independent variables.

5.3 Conclusion

This research revealed that the determinants of the savings behaviour of rural smallholder farmers are versatile and are influenced by demographic, social and economic factors based largely on income. The findings showed that the main predictors of the savings behaviour of smallholder farmers in Karaga district are sex, marital status, dependency level, income, peer influence, institutional influence, self-control and financial literacy.

In conclusion, this research has provided understanding on how and rate at which each determinant predicts the saving behaviour of smallholder farmers in Karaga district. It's therefore important for other researchers to have an in-depth research into predictors of savings behaviour as it greatly influence smallholder farmers' savings behaviour. This is important as savings is the surest way to accumulate money for investments.

5.4 Recommendations

5.4.1 Widening up of Village Savings and Loans Association membership to include men

Based on the findings of this study, it's recommended that Non-Governmental Organizations (NGOs) offering social and financial intermediation services through the formation of Village Savings and Loan Associations should widen its membership beyond women to include men. Men should be educated and encouraged to join. Since the findings revealed that VSLAs had the highest number of cash savers at 71 (23.67%).

5.4.2 The need for more Financial Literacy Advocacy or Awareness

From the findings and through the Spearman Correlation, there is a positive relationship between variables such as peer and institutional influence, self-control and financial literacy and savings behaviour. The binary probit analysis, it further revealed financial literacy to have the greatest impact on savings behaviour. It's therefore imperative that the District Assembly and District Agricultural Unit in partnership with rural banks, financial sector Non-Governmental Organizations (Semi-formal microfinance institutions) and entrepreneurs to increase advocacy on financial literacy through electronic media sensitization (radio), symposia, durbars and theatres. This can be done by leveraging on the decentralized district assembly structure.

5.4.3 Advocacy on Birth Control Measures

The findings also showed that as smallholder farmers with 6-10 dependents were more, the rate of savings decreased as dependency increased. In this regard, it's therefore suggested that the Reproductive and Family Planning Unit of the district health directorate should institute and intensify campaigns on birth control and its economic impact on lives of smallholder farmers. In the same vain, farmers should also learn to leverage on the labor (human capital) of their dependents for higher productivity.

5.4.4 Sensitization on Telecommunication Network Mobile Money Services

From the findings, only two smallholder farmers who do cash savings used mobile money wallets to save cash. With the availability of vendors. I think there is a potential for people to patronize it, thus with the availability of right information. It's is therefore suggested that Bank of Ghana in collaboration with National Communication Authority put in appropriate policy and regulatory regimes to regulate the Telecoms Chamber and its members to intensify innovative campaigns of those services in the rural areas in other to allay the fears of smallholder farmers by demystifying the wrong perceptions smallholder farmers have about mobile money services.

5.5 Suggestions for Future Research

5.5.1 Use of Large Sample Size and to Cover a Broader Area

With reference to the law of large numbers, Saunders *et al.* (2009) espoused that larger sample size is more likely to be representative and the sample mean is more likely to equal the population mean. Lim *et al.* (2011) therefore recommended to researchers to draw a larger sample size to generate a more accurate and representative sample. I also suggest for

this larger sample size to be taking from all the four zones of the district in other to make it more representative and make generalization easy.

5.5.2 Adopting a Cross sectional study

The research wishes to suggest to future researchers to conduct a longitudinal study to enable them observe and monitor the saving behaviour of smallholder farmers in the Karaga district over time. This would facilitate the researchers to gain valuable data which would provide a more accurate behaviour of smallholder farmers.

5.5.3 Using Multiple Methods of Data Collection (Triangulation)

The researcher suggests to future researchers to use multiple methods of data collection to collect data on savings behaviour of smallholder farmers in the Karaga district. This will enable them reduce bias and also mitigate the effects of the inefficiency of data collection methods and instruments.

5.5.4 Inclusion of Personality Dimensions

It's also suggested that beyond the psychological and behavioural variables studied, future researchers could extend the study of these psychological and behavioural variables to include the Personality Dimensions as follows; **E**xtraversion, **A**greeableness, **C**onscientiousness, **O**penness to experience and **N**euroticism. An in-depth study into these variables will espoused a more holistic understanding on the influence of psychological and behavioural variables on savings behaviour.

REFERENCES

AARON A. (2012) A Comparative Study of the Credit with Education (CWE) And The Village Savings and Loans (VSLA) Methodologies of Microfinance Services On Rural Livelihoods. Thesis submitted to University of Ghana: Accessed on www.ugspace.ug.edu.gh/.

Adams, D. and von Pischkel, S. (2008). National savings rates of India and Pakistan: The Macro econometric analysis. *The Pakistan Development Review,* **34**: 1313-1324

Agrawal, P., Sahoo, P., and Dasha, R. K. (2009). Savings behaviour in South Asia. *Journal of Policy Modelling 31 (2009) 208–224*

Ahmed, M. S, (2002). M*anagement in living for senior secondary schools* **(**2nd Ed.). Ghana, Kumasi: Bayoba Graphics Limited.

Ajzen, I. (1991). The theory of planned behaviour. Organizational Behaviour and Human Decision Processes, 50, 179-211.

Ajzen, I., and Fishbein, M. (1980). Understanding attitudes and predicting social behaviour. Englewood Cliffs, NJ: Prentice.Hall.

Akpan S, Udoh E and Aya E (2011), "Analysis of Savings Determinants among Agro-based firm Workers in Nigeria: A Simultaneous Equation Approach", *Research in Humanities and Social Sciences,* www.iiste.org, Vol.1, No.3.

Alessie, R., Lusardi, A. and Aldershof, T. (1997). Income and wealth over the life cycle: Evidence from panel data. *Review of Income and Wealth, 43(1), 1–32*.

Anang, B. T., Dawuda, I. and Imoro, L. (2015). Determinants of savings habit among clients of Bonzali Rural Bank in the Tolon-Kumbungu District of Ghana**.** *UDS International Journal of Development [UDSIJD]*, **2**: 88-97.

Ando, A. and Modigliani, F. (1963). The life cycle hypothesis of saving: Aggregate implications and tests. The American Economic Review.

Anley, Y, Bogale, A and Haile-Gabriel, A, 2007. Adoption decision and use intensity of soil and water conservation measures by smallholder subsistence farmers in Dedo district, Western Ethiopia. Land Degradation and Development 18(3), 289-302.

Annamaria, L., (2000). Explaining why so many households do not save, Dartmouth College and University of Chicago.

Anthes, W.L. (2004). Frozen in the headlights: The dynamics of women and money. *Journal of Financial Planning, 13*(9), 130-14

Artus, P. (2002). Allongement de l'esperance de vie et choix du systeme de retraite. *Revue Economique, 53(4), 809 824.*

Aryeetey, E. and Steel, W, (1995) 'Savings Collectors and Financial Intermediation in Ghana', Savings and Development, 19.

Aryeetey, E., and Gockel, F. A. (1991). *Mobilizing domestic resources for capital formation in Ghana: the role of informal financial sectors*, AERC research paper 3

Athukorala, P., and Sen, K. (2004). The determinants of private saving in India. *World Development, 32, 491-503.*

Bank of Ghana, (2017). Operating rules and guidelines for co-operative credit unions and co-operative financial institutions (cfi): Notice No. Bg/Gov/Sec/2017/06

Baumeister, Roy F. (2002), "Yielding to Temptation: Self-Control Failure, Impulsive Purchasing, and Consumer Behaviour," *Journal of Consumer Research, 28 (March)*, 670–76.

Bayer, P. J., Bernheim, B. D., and Scholz, J. K. (1996). The effects of financial education in the workplace: Evidence from a survey of employers. NBER Report No. 5655. Cambridge, MA: National Bureau of Economic Research.

Bernheim, B. D. and Garrett, D. M. (1996). The determinants and consequences of financial education in the workplace: Evidence from a survey of households. NBER Report No. 5667. Cambridge, MA: National Bureau of Economic Research.

Bersales, L. G. S., and Mapa, D. S. (2006). *Patterns and determinants of household saving in the Philippines* (EMERGE Technical Report). Makati City: EMERGE.

Beshears, J., Choi, J. J., Laibson, D., Madrian, B. C. and Milkman, K. L. (2010). *The effect of providing peer information on retirement savings decisions*. California: Stanford University.

Beverly, S. G. and Sherraden, M. (1999). Institutional determinants of saving: Implications for low-income households and public policy. Journal of Socioeconomics, 28, 457-473.

Boateng, I. K. (1994). *Basic business knowledge and consumer skills***.** An Unpublished Master's Thesis, University of Ghana, Ghana

Browning, M., and Lusardi, A. (1996). Household saving: Micro theories and micro facts. *Journal of Economic Literature, 34*, 1797-1855.

Burns, N., and Grove, S. K. (2009). *The practice of nursing research: appraisal, synthesis, and generation of evidence*. St. Louis, Mo: Saunders Elsevier.

Cagan, P. (1965). The effect of pension plans on aggregate savings: Evidence from a sample survey. NBER Report No. 95. New York, NY: National Bureau of Economic Research.

Canova, L., A. M. M. Rattazzi and P. Webley (2005). The hierarchical structure of saving motives. *Journal of Economic Psychology 26 (2005) 21–34*

Carroll, C. and Summers, L. H. (1987). Why have private savings rates in the United States and Canada diverged? Journal of Monetary Economics, 20, 249-279.

Chakrabarty, D., H. Katayami and H. Maslen (2008). Why do the rich save more? A theory and Australian evidence. *The Economic record, vol.84, special issue, sept.2008, S32-S44*

Chamberlin, Jordan. 2007. Defining smallholder agriculture in Ghana: who are smallholder, what do they do and how they are linked with markets? GSSP Background paper 6. Washington, DC: IFPR

Chowa, G. A. N. (2008). The impacts of an asset-building intervention on rural households in Sub-Saharan Africa (Doctoral Dissertation). Pro-Quest Dissertations and Theses Database (UMI No. 3332075).

Clayton, G. E., and Brown, J. E. (1983). *Economics principles and practice.* Columbus: Charlse E. Merill Publishing Company.

Coakes, S. J., Steed, L., and Ong, C. (2010). *SPSS: analysis without anguish*: version 17.

Cochran, W. G. (1963) Sampling Techniques, 2nd., Ed., New York: John Wiley and Sons, Inc.

Coleman, B. (2001). Microfinance in Northeast Thailand: Who Benefits and How Much? Unpublished manuscript, Asian Development Bank.

Coleman, B. E (1999). The Impact of Group Lending in Northeast Thailand. *Journal of development Economics* 60(1), 105-141.

Cook, A. J., Kerr, G. N., and Moore, K. (2002). Attitudes and intentions towards purchasing GM food. *Journal of Economic Psychology. Special Issue: Social psychology and economics in environmental research, 23,* 557-572.

Cronbach, L. J. (1951). Coefficient Alpha and the internal structure of test. Psychometrika, 16.

Cude, B.J., Lawrence, F.C, Lyons, A.C, Metzger, K., Lejeune, E., Marks, L., and Machtmes, K. (2006). College students and financial literacy: What they know and

what we need to learn. *Eastern Family Economics and Resource Management Association.*

Deaton, A. (1985). Panel data from time cross-sections. *Journal of Econometrics, 30, pp. 109 - 126.*

Delafrooz, N. and Laily (2011). Determinants of saving behaviour and financial problem among employees in Malaysia. *Australian Journal of Basic and Applied Sciences, 5*(7), 222-228, 2011 ISSN 1991-8178

Denizer, C., Wolf, H. and Ying, Y. (2000). Household Savings in the Transition. *Journal of Economic Literature Classification Numbers: D12, D31, D91, O16, P36.*

DeVaney, S., and Su, Y. (1997). Factors predicting the most important source of retirement income. *Compensation and Working Conditions, 2, 25-51.*

District Agricultural Development Strategic Plan 2010-2012. Karaga District Agricultural Development Unit

Duflo, E. and Seaz, E. (2002). The role of information and social interactions in retirement plan decision: Evidence from a randomized experiment. *Quarterly Journal of Economics, 118,* 815-842.

Dupas, P., and Jonathan, R. (2013). Savings constraints and microenterprise development: Evidence from a field experiment in Kenya, *American Economic Journal Applied Economics*, 5 (1): 163-92, January.

Dusenberry, J. S. (1949). *Income, Saving and the Theory of Consumer Behaviours.* Cambridge: Harvard University Press

Easton, V. J., and McColl, H. J. (1997) Subjective Probability" Statistical Education through Problem Solving Statistics Glossary v1.1. Retrieved June 15, 2006, from http://www.stats.gla.ac.uk/steps/glossary/probability.html

Erskine, M., Kier, C., Leung, A., and Sproule, R. (2005). Peer crowd, work experience, and financial saving behaviour of young Canadians. *Journal of Economic Psychology, 27*(2), 262-284.

Esenvalde, I. (2010). Psychological predictors of saving behaviour. *Contrasting the impact of optimism and burnout on self-control, achievement motivation and savings behaviour*. Ph.D. dissertation, Alliant International University, Los Angeles, United States-California. Retrieved July 18, 2011, from Dissertations and Theses: Full text. (Publication No.AAT 3452407.

Friedman, M. (1957). *A Theory of the Consumption Function*. Princeton, NJ: Princeton University Press for the National Bureau of Economic Research.

Garman, E. T., and Forgue, R. E. (2006). Personal finance (7th ed.). Boston: Houghton Mifflin Co.

Ghana District Assemblies, Karaga District (2009). *District Wide Assistance Project (DWAP) Submission for 2009*. Karaga District Profile

Ghana Statistical Service (2008). *National Population and Housing Census*. GSS, Accra, Ghana.

Ghana Statistical Service (2010). *2010 Population and Housing Census* - Regional Analytical Report-Northern Region Census Report.

Ghana Statistical Service (2010). *2010 Population and Housing Census* - National Analytical Census Report.

Hafeez ur Rehman, Furrukh Bashir and Muhammad Zahir Faridi (2011), Saving behaviour among different income groups in Pakistan: A micro study. *International Journal of Humanities and Social Sciences*, Volume 1, No. 10, pp. 268-277

Hair, Babin, Money and Samouel, Essentials of Business Research, Wiley, 2003

Hair, Jr. J.F., Black, W.C., Babin, B.J., Anderson, R.E., and Tatham, R.L., (2006). *Multivariate Data Analysis.* Sixth Edition, Pearson Education International, Prentice Hall.

Hao, L. (1996). Family structure, private transfers, and the economic well-being of families with children. Social Forces, 75(1), 269-292.

Harris, M. N., J. Loundes and E. Webster (2002). Determinants of household saving in Australia. *Economic Record, 78(241), 207–223*

Henderson, J.V. and Poole, W. (1991). Principles of Economics. Lexington, Mass: D.C. *Heath, pp. 279-81*

Hilgert, M.A., Hogarth, J.M., and Beverly S.B. (2003). Household Financial Management: The Connection between Knowledge and Behaviour. *Federal Reserve Bulletin*, pp. 309–322.

Hira, T.K. and Loibl, C. (2005). Understanding the impact of employer-provided financial education on workplace satisfaction. *Journal of Consumer Affairs, 39*(1), 173-194.

Hirschl, T. A., Altobelli, J., and Rank, M. (2003). Does marriage increase the odds of affluence? Exploring the life course probabilities. Journal of Marriage and the Family, 65(927-938).

Horioka, C. Y., and W. Watanabe (1997). Why do people save? A micro-analysis of motives for household saving in Japan. *Economic Journal, 107(442), 537–552*

Issahaku. H (2011). Determinants of household savings and investment in deprived district capitals in Ghana –A case study of Nadowli in the Upper West Region of Ghana. *Continental J, Social Sciences 4:1- 11, 2011.*

Jacqueline S. (2010) demand and challenges of accessing saving product in Tajikistan microfinance institution. Universite Libre de Bruxelles, Belgium's

Jami. C, Fred. S and Sherraden, M (2005). Institutions and Savings in Low-Income Households: CSD Working Paper No. 05-13 2005

Johnson, P. J. (1999). Saving practices of new Canadians from Vietnam and Laos. *Journal of Consumer Affairs, 33(1), 48–75*

Katona, G. (1975). *Psychological economics*. New York: Elsevier

Kelly, A.C. and Williamson, J.G. (1968). Household Saving Behaviour in the Developing Economies: The Indonesian Case. *Economic Development and Cultural Change, Vol. 16, No. 3*

Keynes, J. M (1936), 'The *General Theory of Employment, Interest and Money*', Macmillian London.

Kibet L. K., Muntai B. K., Ouma D. E., Ouma S. A. and Owour G. (2009). Determinants of Household Saving: Case Study of Smallholder farmers, entrepreneurs and teachers in rural Kenya, *Journal of Development and Agricultural Economics, 1(7), 137-143.*

Kotlikoff, L. J. (1989). *What determines savings?* The MIT Press, Cambridge Lambert and Lim (1986)

Lim, C.S., Sia, B.K., and Gan, G.J. (2011). The analysis of psychological factors affecting savers in Malaysia. *Middle Easter Finance and Economic, 12,*77-85.

Lindqvist, A., Julander, C. R. and Fjaestad, B. (1978). *Development of behavioural scientific indicators on saving*. Report of the project - saving and saving behaviour. Stockholm: EFI,

Lloyd, T. B. (1999). *Money, banking and economic activities* (3rd Ed.). New Jersey: Practice Hall.

Lupton, J., and Smith, J. P. (2003). Marriage, assets and savings. In S. Grossbard-Shecht (Ed.), Marriage and the economy: Theory and evidence from advanced industrial societies (pp. 129-152). NY: Cambridge University Press.

Madrian, B. C. and Shea, D. F. (2000). The power of suggestion: Inertia in 401(k) participation and savings behaviour. NBER Report No. 7682. Cambridge, MA: National Bureau of Economic Research.

Masters, R., and Meier, R. (1988). Sex differences in risk taking propensity of entrepreneurs. *Journal of Small Business Management*, 26(1), *31-35.*

Miles, M.B. and Huberman, A.M. Qualitative Data Analysis: An Expanded Sourcebook (2nd ed).

Miller, R. L., and VanHoose, D. (2001). *Money, banking and financial markets.* Australia: South – Western Thomson Learning.

Modigliani, F., and Brumberg, R. (1954). *Utility analysis and the consumption function: an interpretation of cross-section data in Post-Keynesian Economics*. K. Kurihara Publishing House, New Brunswick, NJ: Rutgers University Press.

Nwibo, 2013). Determinants of Savings and Investment Capacities of Farming Households in Udi Local Government Area of Enugu State, Nigeria

Nwibo, S. U. and Alimba, J. O. (2013), "Determinants of Investment Decisions among Agribusiness Investors in South East, Nigeria", *Journal of Business and Management*, **8**(6): 60–67. Available online at: http://www.iosrjournals.org

Otto, A. M. C. (2009). *The economic psychology of adolescent saving.* Exeter: University of Exeter.

Pandey I. M. and Swasdpeera, P. (2012) 'Phenomenology of willingness to save: a study of Thai salaried individuals', *J. International Business and Entrepreneurship development*, Vol. 6, No 1, pp83-99.

Parahoo, K. (2006). *Nursing research: principles, process, and issues*. Basingstoke, Hampshire, [England]; New York: Palgrave Macmillan.

Polit, D. F., Hungler, B. P., and Beck, C. T. (2001). *Essentials of nursing research: methods, appraisal and utilization*. Philadelphia: Lippincott.

Poterba, J. M., Venti, S. F., and Wise, D. A. (1996). How retirement saving programs increase saving. *Journal of Economic Perspectives*, 10, 91-112.

Quartey, P. (2002), `Financing Small and Medium-sized Enterprises in Ghana', *Journal of African Business*, Vol. 4, pp. 37-56

Quartey, P. and Blankson, T. (2008) 'Household savings in Ghana: Does Policy Matter' in Aryeetey, E. and Kanbur, R. (Eds), *The Economy of Ghana: Analytical Perspective on Stability, growth and Poverty*, James Curry Woeth Publishing Services, Accra New Town, Ghana.

Quartey, P. and Blankson, T. (2008). Household savings in Ghana: Does Policy Matter?

Rehman, H., Faridi, M. Z. and Bashir, F. (2010). Households Saving behaviour in Pakistan: A case of Multan district. *Pakistan Journal of Social Sciences*, 30 (1), 17-29.

Rodriguez, J. and Meyer, R. (1988). "The Analysis of Saving Behaviour: The Case of Rural Households in the Philippines." The Philippine Institute for Development Studies (PIDS) Working Paper No. 88-20.

Sabri, M.F. and MacDonald, M. (2010). Savings behaviour and financial problems among college students: The role of financial literacy in Malaysia. *Cross-Cultural Communication*, *6*(3): 103-110.

Samuelson, P. and Samuelson, W. (1980). *Economics*. McGraw-Hill International Book Company, Auckland

Schenk, R. (2013). CyberEconomics: An analysis of unintended consequences.

Seigel, J. S. (1993). A generation of change: A profile of American's older population. New York: Russell Sage Publication.

Sherraden, M., Johnson, L., Clancy, M., Beverly, S. G., Schreiner, M., Zhan, M., *et al.* . (2000). Savings patterns in IDA programs. CSD Report. St. Louis, MO: Center for Social Development, Washington University.

Sherraden, M., Schreiner, M., and Beverly, S. G. (2003). Income, institutions, and saving performance in development accounts. Economic Development Quarterly, 17, 95-112.

Shultz, T.P. (2005). Demographic Determinants of Savings: Estimating and Interpreting the Aggregate Association in Asia. *IZA DP No. 1479.*

Suttons C. N. and Jenkins B., (2007), *the Role of the Financial Services Sector in Expanding Economic Opportunity*

Thaler, R. H., and Shefrin, H. M. (1981). An economic theory of self-control. *Journal of Political Economy, 89(2), 392-406.* Thousand Oaks, CA: SAGE

United Nations (2000), "Report of the international symposium on the mobilization of personal savings in developing countries", Kingston, Jamaica, savings Development, *UN Publications*, No E81. II. A6 PP: 7-14.

Wagner K., M. Grinstein-Weiss, and F. M. Ssewamala (2005). Saving and Asset Accumulation among Low - Income Families with Children in IDAs. *Children and Youth Services Review28 (2), 193-211*

Waite, L. J. (1995). Does marriage matter? Demography, 32(4), 483-507. Waite, L. J., and Gallagher, M. (2000). The case for marriage: Why married people are happier, healthier, and better off financially. New York: Doubleday.

Warneryd K-E 1996. Personality and Saving VSB-Center Savings Project Progress Report 39. Center for Economic Research, Tilburg University.

Webley, P., R. P. Burlando and A. Viner (2000). Individual differences, saving motives and saving behaviour: A cross-national study' in Hoelzl, E. (Ed.) *Fairness and cooperation, IAREP/SABE 2000. 25th Colloquium, Baden, Vienna, Austria (pp. 497–501).*

Wolday Amaha, and Tekie Alemu (2014), Household saving behaviour and saving mobilization in Ethiopia, Ethiopian Inclusive Finance Training and Research Institute, Addis Ababa.

Xiao, J. J., and Noring, F. E. (1994) 'Perceived saving motives and hierarchical financial needs', *Financial Counselling and Planning, 5, 25–44.*

Yamane, Taro (1967). *Elementary sampling theory*. Prentice-Hall, Englewood Cliffs, N.J

Zhong, L. X., and Xiao, J. J. (1995). Determinants of family bond and stock holdings. *Financial Counseling and Planning, 6, 107-114.*

Ziorklui SQ, Barbee W. (2003). Financial sector reforms and savings in Sub-Saharan Africa, Savings and Development, Issue 1.

APPENDICES

APPENDIX 1: RESEARCH QUESTIONNAIRE

EFFECTS OF PREDICTOR VARIABLES ON SAVINGS BEHAVIOUR OF RURAL SMALLHOLDER FARMERS IN KARAGA DISTRICT OF NORTHERN REGION

SECTION A: DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS

1. How old are you?

A. 15-25 { } B. 26-35 { } C. 36-45 { } D. 46-55 { } E. 56 above { }

2. What is your sex?

A. Male { } B. female { }

3. What is the highest level of education you have completed?

A. Primary { } B. Junior { } C. Secondary { } D. Tertiary { } E. No schooling { } F. Others (Specify)…….

4. What is your marital status?

A. Married { } B. Single { } C. Divorce { } D. Widowed { }

5. How many dependents do you have?

0-15 years …… Above age 64 Years ……..

A. 0-5 { } B. 6-10 { } C. 11-15 { } D. 16-20 { } E. 20 Above { }

6. Are you a farmer?

A. Yes { } B. No { }

7. Is farming you major occupation?

A. Yes { } B. No { }

8. Which of the following agricultural activities are you engaged in? *(multiple answers possible)*

Crop farming	**(√)**	**How many bags or basins did you harvest last year?**	**How many bags or basins did you sell last year?**	**How much did you realize from the sale last year? (GHS)**
Maize				
Rice				
Millet				
Yam				
Soya bean				
Guinea corn				
Groundnut				
Cassava				
Beans				
Leafy green vegetables(Bra, ayoyo, allefu etc)				
Other 1……				
Other 2……				
Livestock		**NA**	**How many animals did you sell last year?**	**How much money did you make from the sale last year? (GHC).**
Cattle				

Sheep				
Goat				
Pig				
Poultry				
Other 1…….				
Other 1…….				

9. Which of the following other minor occupations are you engaged in? *(If none, skip to 14).*

A. Trade { } B. Salaried employment { } C. None { }

10. If Trade, what kind of trade are you engaged in?

……

11. What is your monthly income from the trade you are engaged in?

A. <100 { } B. 100-400 { } C. 401-700 { } D. 710-1000 E. 1000> { }

12. If salaried employment, what kind of work are you engaged in?

……..

13. What is your monthly income from the salaried employment?

B. <100 { } B. 100-400 { } C. 401-700 { } D. 710-1000 E. 1000> { }

SAVINGS BEHAVIOUR OF SMALLHOLDER FARMERS

14. Do you save?

Yes { } B. No { }

15. What forms do you save?

A. Cash { } B. Non-cash { } C. Both { }

16. If cash, how do you do your cash savings? I own…..

A. Savings account { } B. Shares { } C. Insurance(……) { } D. Contribution { }

E. Other, please specify……..

17. Where do you save?

A. VSLA { } B. ASCA/ROSCA { } C. Rural Bank (……...) { } D. Susu { } E. Keep cash at home

18. How much do you save?

A. Ghc2-Ghc10 { } B. Ghc11-20 { } C. Ghc21-Ghc30 { } D. Ghc31-Ghc40 { }

E. Ghc 40 and above { }

19. What is the frequency of your cash savings? I save…

A. Daily { } B. Weekly { } C. Fortnightly { } D. Monthly { } E. Yearly { }

E. Occasional { } F. others please specify……

20. If non-cash, which of the following forms do you save? I own…..

A. Land { } B. Grains { } C. Cloth { } D. Livestock { }

E. Machinery …… { } F. Other, please specify……..

B. What is the frequency of your non-cash savings? I save…

A. Daily { } B. Weekly { } C. Fortnightly { } D. Monthly { } E. Yearly { }

E. others please specify……

21. Do you save regularly?

A. Yes { } B. No { }

22. In which of the two seasons do you save most?

A. Farming season { } B. Off-farm Season { }

23. Why do you save most in the chosen season above?

Please provide reasons.

……..

……..

SECTION B: FACTORS INFLUENCING SAVINGS BEHAVIOUR

This section of the survey consists of three independent variables such as your knowledge of financial literacy, the effects of peer and institutional influence and self-control and the dependent variable, savings behaviour. Kindly indicate the extent to which you agree or disagree with the various statements about you in relation to the variables mentioned above. Please rate each statement using below from 1-5 scale. Only one response is required. Tick **(√)** where applicable to select a response

1= Strongly disagree, 2= Disagree, 3= Neutral, 4=Agree, 5= Strongly Agree

No	**Variable/Statement**	**Scale**				
	PEER INFLUENCE	**1**	**2**	**3**	**4**	**5**
PI1	I always discuss about money management issue (saving) with AEA.					
PI2	I always compare the amount of saving and spending with my spouse.					
PI3	I always spend my leisure time with friends.					
PI4	I always involve in money spending activities with friends.					

PI5	I interact with microfinance institution staff					
PI6	I have been sensitized on savings by MF staff					
PI7	I belong to a Village Savings and Loans Association (VSLA)					
	INSTITUTIONAL INFLUENCE	**1**	**2**	**3**	**4**	**5**
II1	I hold a bank account					
II2	I have been trained to save by AEA					
II3	I belong to a mandatory saving group					
II4	I have been sensitized by NGO to save					
II5	I save to qualify for a loan facility					
II6	I have a microfinance in my community					
II7	There is pride in saving with a bank					
	SELF CONTROL	**1**	**2**	**3**	**4**	**5**
SC1	I don't save because I think it's too difficult and hard to save					
SC2	I enjoy spending on things that are not really practical and useful					
SC3	When I get money, I spend it immediately (one to two days)					
SC4	I always fail to control myself from spending money					
SC5	Once I have money, I always have the urge to spend					
SC6	I always want immediate consumption than later					
SC7	When I set saving goal for myself, I rarely achieve them					
SC8	I am attracted by lure					
SC9	I don't save because I don't have enough					

SC10	I don't save because I am poor					
	FINANCIAL LITERACY	**1**	**2**	**3**	**4**	**5**
FL1	I have better understanding of how to invest my money.					
FL2	I have better understanding of how to manage my credit use.					
FL3	I have a very clear idea of my financial needs during old age.					
FL4	I have the ability to maintain financial records for my income and expenditure.					
FL5	I have little or no difficulty in managing my money.					
FL6	I have the ability to prepare my own expenditure budget.					
FL7	I have the ability to make a profitable investment					
	SAVINGS BEHAVIOUR (DEPENDENT VARIABLE)	**1**	**2**	**3**	**4**	**5**
SB1	I regularly put money aside for the future					
SB2	In order to save, I always compare prices before I make a purchase					
SB3	In order to save, I follow a planned expenditure					
SB4	I always have money available to cater for emergencies					
SB5	In order to save, I consider necessity before I make a purchase					
SB6	In order to save, I make conscious efforts to reduce expenditure					
SB7	I save to achieve my goals					
SB8	In order to save, I own a savings account					

APPENDIX 2: KARAGA DISTRICT ASSEMBLY AREA COUNCILS AND THEIR RESPECTIVE POPULATIONS

S/N	COMMUNITIES BY AREA COUNCIL	POPULATION
	KARAGA AREA COUNCIL	
1	KARAGA	12800
2	KPASABLO	497
3	MONKULA	549
4	KUPALI	534
5	NAGUNGKPANG	564
6	NANGUNG NAYILI	499
7	SHEBO	362
8	SIMOLI	22
9	ZINYEE	71
10	TONG	1807
11	LANGOGU	1325
12	NYENSOBGA	1159
13	GBITIGU	260
	SUB TOTALS	**20449**
	BAGLI/ZANDUA AREA COUNCIL	
14	BAGLI	1064
15	BAGLI SUGRI	460
16	YILAN	246
17	PUKURA	338
18	GBANLUA	660
19	BAG-KURILI	491
20	ZIKAYA	96
21	SOLUGU	235
22	KPAKPILIGA	820
23	GBAPOI	28
24	DITANI	350
25	GALABIHI	632
26	NAKPALIGU	292
27	ZANDUA	864
28	GUNDOGU	718
29	DIMONG	445
30	LULIGU	745
31	MOLEZEGU	420

32	DIMEI	30
33	KPASONG	810
34	KAMBONSIYA	200
35	TAKALIGA	447
36	KOKPELIGU	820
37	KULUGONG	21
38	NABUNI	125
	SUB TOTALS	**11357**
	KUDULI AREA COUNCIL	
39	KUDULI	503
40	FATILANYILI	104
41	ZINYELI	192
42	BINDULI	228
43	KPUNLANYILI	214
44	TINDANG	51
45	KOMOAYILI	1367
46	ASAFOYILI	50
47	YEMO-KARAGA	660
48	KPALIGUMA	198
49	TINGA	177
50	**SUB TOTALS**	**3744**
	SAKOLU/NAMBURUGU	
51	JAGOO	210
52	TINTARIGA	104
53	DEMUGI	14
54	BILALUGLI	243
55	DAGAGU	231
56	NALOA	304
57	BILSINAYILI	214
58	LADUA	257
59	KAPTUNG	274
60	YABGA	185
61	NANYONGULI	76
62	GULI	33
63	NYANGBALO	427
64	JAMAHA	123
65	GUNAYILI	160

66	NAKUNDUGU 3	90
67	ACHINA-YILI	142
68	NAMANG	835
69	YIBEE	318
70	KASHELI	187
71	BINGUNALORI	448
72	KUNBELIK	55
73	NAYONBERI	151
74	TIGEN	47
75	NANSONI	74
76	GBAA	51
77	GBINATUA	114
78	YILIKPANI	270
79	TAMBIGU	208
80	NAYOBLI	107
81	TULINGA	112
82	GBALIGA	123
83	TANYELI	234
84	NAPOLIGU	205
85	YIBEI-YILI	47
86	GBENJAGA	500
87	KUTIGU	100
88	JANKPENI	221
89	NAKUNDUGU 1	366
90	NAKUNDUGU 2	206
91	YAGBAA	226
92	LANTANI	100
93	SALKPA	134
94	PUGBONG	248
95	KASALI	187
96	NAAMANTULA	26
97	DUNA	160
98	VAWARI	37
99	BIMLAYILI	38
100	TANGDONG	145
101	NANGBANI	109
102	DIBLI	225
103	GUMONAYILI	202
104	ZINYEE	210

105	KPALVAGU	44
106	DIBULO	161
107	KPABO	198
108	NAMBURUGU	499
109	KPABENI	32
110	SOGUNAYILI	178
111	SHELANYILI	337
112	ACHIRIYILI	66
113	SAKULO	304
114	JAKPAGLYILI	126
115	YIDUA	63
116	GOA	164
117	SANDUA	459
118	SOGNAYILI	247
119	NAMOGTELLI	159
120	LACLAC	232
121	TANBIGU	208
122	LANTANI	100
123	TUYINI	183
124	ZORGU	305
125	KPAGLOO	193
126	NYINGALISUGRI	144
127	NYINGALI	640
128	MAANEE	240
129	NAMARI	53
130	PIONG	510
131	DODIGARI	128
132	TUVUGU	58
133	LANTAG	138
134	GBENGBE YILI	132
135	NADABARI	122
136	GULUGU	263
	SUB TOTALS	**16799**
	PISHIGU AREA COUNCIL	
137	PISHIGU	4141
138	TAMALIGU	3553
139	NYONG-NAYILI	1602
140	NYONG-SAMPAYILI	482

141	NYONG-GUMA	1454
142	TIGINAYILI	131
143	BAGURUGU	2783
144	FULANI-YILI	102
145	BAGURUGU-YAPALSI	125
146	TUYINI	362
147	SUNG	2286
148	KUNANG	286
149	KPATARBORGU	1946
150	GORGU	541
151	ZANKALI	2237
152	MALIGUNAYILI	189
153	AJIGOGUNAYILI	23
154	PAASHEGNI	85
155	DIDOGU-TAMALIGU	257
156	BANDIAKUNGYILI	51
157	NANDUKPALIGA	38
158	SADUGU	146
159	TUBILZEI	98
160	WARIVINAAYILI	73
161	BOTENGLI-YAPALSI	142
162	BOTENGLI	54
163	YILLANG	83
164	SADUGU-YAPALSI	28
165	MONGUGBENI	43
166	YEGBORGU	62
167	SILIBORMA-NAYILI	59
168	BORUMANKURA	46
169	MOGU-GONGNI	124
170	ABIN-KURA	86
171	NAAMASIM	87
172	KPELN-KURA	120
	SUB TOTALS	**23925**
	GRAND TOTAL	**76274**

Source: District Programme Coordinating unit.