EFFECTS OF SOCIAL CAPITAL AND MICROCREDIT ON PROFITABILITY OF GRAIN TRADERS IN SOUTHWESTERN NIGERIA

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A Thesis in the Department of Agricultural Economics submitted to the Faculty of Agriculture and Forestry in Partial Fulfillment of the Requirements for the award of the Degree of DOCTOR OF PHILOSOPHY, UNIVERSITYOF IBADAN.

December, 2014

DEDICATION

This thesis is dedicated to the loving memory of my late father Mr. Isaiah Oluwabunmi Adeniji who cared so much about my education and to the cherished memory of my late brother Professor Isaiah Adeyinka Adeniji whose chair was announced after his demise.

ABSTRACT

Grain marketing requires considerable investment of fund but traders are often plagued with inadequate capital to run their enterprises. The inadequacy of fund prevents traders from expanding their businesses resulting in low profit margin. However, social capital is increasingly recognised as a bridge for the gap in credit availability which can help in business expansion and profitability. There is little empirical evidence on the extent of the effectiveness of social capital and microcredit delivery in profitability of traders. The study was designed to investigate the effects of social capital and microcredit on profitability of grain traders in southwestern Nigeria.

Multistage sampling procedure was employed for the study with random selection of Oyo and Ogun states from the six states in southwestern Nigeria. Two Local Government Areas (LGAs) were then randomly selected from the states. Eleven rural and twelve urban markets were randomly chosen in each of the LGAs based on Probability Proportionate to Size (PPS). Finally, 500 grain traders were sampled using PPS, with 492 traders having detailed information used for the analysis. Data were collected on grain traders' socio-economic characteristics, membership density, Meeting Attendance (MA), heterogeneity, Decision Making (DM), Cash Contribution (CC), Labour Contribution (LC), trust, social cohesion, Time Lag (TL), Payback Period (PP), credit distance as well as costs and returns. Data were analysed using descriptive statistics, multinomial logit, budgetary analysis, ordinary least square and two- stage least square regression models at $\alpha_{0.05}$.

Age and household size were 43.3 ± 9.4 years and 6.0 ± 2.9 respectively. Density of membership in associations was 3.0 ± 0.1. Average MA by traders was four out of five. Membership of the association was diversified with heterogeneity index of 69.9%. Members participated in three out of five decisions made by the associations. The six microcredit sources identified were Traders' Association (TA); community association; cooperative society; Rotating Savings and Credit Association (ROSCAS); Friends and Relatives (FR) and Microfinance Bank (MB). Total revenue was ₦496, 135.80 while net revenue was ₦12, 359.00. Average amount of credit granted from the six identified sources was ₦67, 480.13 ±6, 764.80 representing only 46.0% of the total credit needs of the traders. The TL for credit was 2.13 ± 2.00 weeks with a PP of 6.51 ±4.17 months.

Payback period decreased the likelihood of access to credit in TA, ROSCAS, FR and MB ranging from 61.5% to 84.5%. Credit distance increased credit access in TA (2.81) and ROSCAS (1.93). Interest charged decreased credit access in TA (-2.40) and RF (-3.38). Trust and heterogeneity indices increased credit access in ROSCAS by 77.5% and 99.2% respectively. Increase in time lag reduced profitability of the grain traders (-0.0235) while social capital increased profitability by 12.1%.

Social capital increased access to, and the amount of credit available, which improved profitability of grain traders. Therefore, social capital formation with its attendant implications for improved access to microcredit should be encouraged.

Keywords: Social capital, Microcredit access, Grain traders, Grain business expansion, Credit sources

Word count: 477

ACKNOWLEDGEMENTS

My greatest appreciation goes to the Almighty God for whom He is in my life. He is "Jehovah overdo". He has more grace than man can comprehend; "more yield than man can sow". It is only by His grace and mercy that my dream of bagging a doctor of philosophy degree became a reality in spite of all odds. To Him be the glory forever and ever (Amen).

I wish to express my profound gratitude to my indefatigable supervisor; Dr. Sulaiman Adesina Yusuf whose invaluable guidance, suggestions and constructive criticisms have shaped the thesis up to this level. He is an embodiment of honour, wisdom, intelligence, excellence and dignity. He is an eminent scholar who has left a lasting and indelible mark in my life with his hard work, dedication, humility and labour of love. I am indeed very grateful!

I am highly indebted to Professors A.O. Falusi and V.O. Okoruwa who are members of my supervisory committee. They have contributed in no small measure to the successful completion of this study. I would be ungrateful if I failed to acknowledge my first supervisor; Late Dr. Olubunmi Idowu Yetunde Ajani. She was indeed a virtuous woman. Her immense contribution to this study before and after my conversion examination is highly appreciated. Continue to rest in the bossom of the Almighty God.

My deep sense of appreciation also goes to Professor M.A.Y. Rhaji, Drs. T.T Awoyemi, O.A. Oni, B.T. Omonona, Adetola Adeoti, Kemisola Adenegan, K.K Salman, Oluwakemi Obayelu and Abimbola Adepoju for their unwaving assistance and encouragements during the course of this study.

Special thanks to Dr. O.L. Balogun for his invaluable contribution to the collection and analysis of data for this study. He was there for me through the thick and thin of this programme. I am also sincerely grateful to Dr. Roseline Akinlade for her unalloyed support in various ways to ensure successful completion of this study

The process of data collection was made possible through the support of Dr. O.O Ogunjimi, F.M. Odesola, Oludunke Durojaiye and Babatope Akinyemi. I also wish to put on record the contribution of all members of non- academic staff of the Department of Agricultural Economics University of Ibadan, Ibadan; Mrs Faosat Oladejo, Mrs Iyabo Atanda, Mr. Lekan Animashaun and Mrs Nike Adesina. Your administrative support contributed to the successful completion of this programme.

I would like to appreciate the friendship and camaraderie offered by the following people: Drs, Gbemisola Adeyoonu, Oluwatoyin Adigun, Foluso Agunlana, Ogheneruemu Obi Egbedi, Waheed Ashagidighi, Mrs Oluwakemi Olowe, Mrs Bose Fatiregun, Mrs Ifeoluwa Amao and Mrs Justina Lawal. Your moral and academic support is highly acknowledged. My deep sense of appreciation goes to members of the Department of Agricultural Education, Emmanuel Alayande College of Education Oyo; Dr. G.F. Faniyi, Mr O.A. Talabi, Dr. A.A. Adeleye among others and also Mrs F.Y. Adewale and Mrs Adebola Alamu for their constant love and prayers for the successful completion of this programme.

My mother, Mrs Susanah Anike Adeniji; my siblings Dr. (Very Revd) Isaac Adeyemi Adeniji, Mrs Busayo Oladele and others deserve my gratitude for their prayers and encouragements. I also share this thesis with my blessed children; Barrister James, Oludunke and Oluwatimilehin Durojaiye for their constant love, motivation and prayers.

Last, but by no means the least, my warmest gratitude is extended to my heartthrob; Dr. Jacob Adeyeye Durojaiye who has been there for me since my undergraduate days in the University. He has always been on my neck to attain this feat. He is not only my husband but my best friend. His support in various forms, especially in the provision of excellent enabling environment, prayers and encouragement is worthy of commendation. I say thank you my Honey!

Once again, my immense gratitude goes to the Alpha and Omega, the beginning and the end for His faithfulness.

CERTIFICATION

I certify that this thesis was carried out by Adenike Mary DUROJAIYE under my supervision in the Department of Agricultural Economics, University of Ibadan, Nigeria.

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LIST OF ACRONYMS

ACGSF	Agricultural Credit Guarantee Scheme Fund
CBN	Central Bank of Nigeria
CC	Cash Contribution
DM	Decision Making
FAO	Food and Agriculture Organization of the United Nations
FDU	Farmers Development Union
FEAP	Family Economic Advancement Programme
FOS	Federal Office of Statistics
FR	Friends and Relatives
FSP	Family Support Programme
GB	Grammen Bank
GDP	Gross Domestic Product
HI	Heterogeneity Index
IMF	International Monetary Fund
LC	Labour Contribution
LGA	Local Government Area
LLIs	Local Level Institutions
MAI	Meeting Attendance Index
MDGs	Millennium Development Goals
MFIs	Microfinance Institutions
MNL	Multinomial Logit
MPRSF	Microfinance Policy, Regulatory and Supervisory Framework
NACB	Nigerian Agricultural and Cooperative Bank
NACRDB	Nigerian Agricultural Cooperative and Rural Development Bank
NAPEP	National Poverty Eradication Programme
NBS	National Bureau of Statistics
NEEDS	National Economic Empowerment and Development Strategy
OLS	Ordinary Least Square
PBN	Peoples' Bank of Nigeria
PCA	Principal Component Analysis

PP	Payback Period
ROSCAS	Rotating Savings and Credit Associations
SAP	Structural Adjustment Programme
SMEDAN	Small and Medium Enterprises Development Agency of Nigeria
SMEs	Small and Medium Scale Enterprises
SMEEIS	Small and Medium Enterprises Equity Investment Scheme
2SLS	Two-stage Least Square Regression
TA	Traders' Association
TL	Time lag
UNDP	United Nations Development Programme

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Traditionally, the concept of capital has included natural, physical and human capital as the main building blocks of economic development and growth. It is now recognized that these three types of capital determine only part of the process of economic growth, because they overlook the way in which the economic actors interact and organise themselves (social capital) to generate growth and development. The missing link in other words is social capital (Grootaert, 1997). Views differ about what constitute social capital, how it operates, to whom and what the concept applies, and how to delineate between its sources, manifestations and effects. However, there seems to be broader agreement in the literature about what social capital does than what it is. In particular, it is widely agreed that social capital facilitates mutually beneficial collective action. Social capital has been defined as the sum of the actual and potential resources embedded within available through, and derived from the networks or social units (Nahapiet and Ghosal, 1998); it refers to the institutions, relationship and norms that shape the quality and quantity of social interactions. This phenomenon has been found to facilitate resource exchange and product innovation (Hansen, 1990), aids in the creation of intellectual capital (Nahapiet and Ghosal, 1998), increases the effectiveness of cross-functional teams (Rosenthal, 1996) and strengthens supplier relations (Uzzi, 1997). It is an asset that is engendered via social relations and can be employed to facilitate action and enlarge one's profit (Griffith and Harvey, 2004). Social capital enables individuals and firms to cooperate with one another to achieve objectives (Coleman, 1988). It is a productive asset which is a substitute for and complement to other productive assets. The productivity of social capital leads to the expectation that firms and individuals invests in relationships (Schmid and Robinson, 1995).

Social capital is further defined as the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationship of mutual acquaintance or recognition - in other words, to membership in a group- which provides each of its members with the backing of the collectivity-owned capital, a 'credential' which entitles them to credit, in the various sense of the word (Boudieu, 1985). It is further recognized that, even though the returns to this relatively intangible form of capital were less clearly defined and more uncertain than the returns to other forms of capital, its acquisition requires deliberate investment (Bourdieu, 1985).

Coupled with social capital is the idea that sufficient density of ties among a group of individual increases adherence to norms and thereby facilitates exchange without recourse to the formal system of law (Coleman, 1988).

Although there is no consensus on a precise definition of social capital, the central idea;widely accepted is that social capital refers to the institutional relationships and norms that shape the quality and quantity of society's social interactions. Much of the social capital is therefore built during interaction that occurs due to social, religious or cultural reasons. In this regard the World Bank (1998) sees social capital as the social cohesion or the glue that holds institutions together and without which there cannot be any economic growth or human well- being. The concept of social capital suggests that an individual's social relationships constitutes an advantage in his economic activity because information that he holds about the members of his social capital reduces the moral hazard in trades made with them.

There is overwhelming evidence that low access to formal credit persists in most developing economies including Nigeria (Brata, 2005). Most of the middlemen that engage in food-crops marketing are not familiar with formal credits. Therefore formal credit institution needs a mediation or substitution. Entrepreneurs who run micro-businesses lack access to capital and are perceived as unattractive risks by commercial lenders, partly because of little collateral, but also because of non-existent credit histories and poor business knowledge and skills. These factors result in low-income entrepreneurs.

Microcredit is the extension of very small loans to the unemployed, poor entrepreneurs and others living in poverty that is not bankable. These individuals lack collateral, steady employment and a verifiable credit history and therefore cannot meet even the most minimum qualifications to gain access to traditional credit (Tata and Prasad, 2005). The intention of microcredit institutions is to help poor people and those denied access to credit to overcome poverty and fund income-generating activities for self employment. This is exploited through peer-lending in which borrowers operate with the lender through groups with individual borrower status dependent upon the performance of all group members. Peer-lending based microcredit programs (generally considered to be initiated by the 2006 Nobel Prize winner Mohammed Yunus of the Grameen Bank) began in Bangladesh where it has been touted as widely successful. This reputation for success has led to the replication throughout the developing world and eventually, attempts in the developed world including the United States (Light, 1998).

Social capital in the form of indigenous networks is perceived as a substitute for financial collateral in the selection of loan beneficiaries and in loan distribution techniques. Given this relationship, it is possible for microcredit programmes to design systems that help micro-businesses perform better by focusing on social capital development and configuration. The relationship between social capital and credit access is an interesting issue. Enabling small groups of middlemen in marketing to access both savings and credit facilities as a single legal entity might ease the substantial credit constraint that are presently preventing many investments in grain marketing in Nigeria. Group-based microcredit programs can therefore play a significant role in the profitability of grain traders. Profit is the financial return or reward that traders aim to achieve and the ultimate aim of every business enterprise is to maximize overall profit. Profits are necessary for survival in the long run in a competitive environment. Long–term profitability derives from the relations between cost and revenue. A low-profit enterprise will lack the finance for expansion. It is also an important signal to providers of finance to a business. Lenders are more likely to provide credit to a business that can demonstrate that it makes profit (or is very likely to do so in the near future) and that it can pay debts as they fall due. Given that most entrepreneurs invest in order to make a return, the profit earned by a business can be used to measure the success of that investment. Profitability is the more fundamental performance measure.

Financial markets in developing countries and particularly the Sub-Saharan African (SSA) region are largely underdeveloped, highly inefficient and concentrated in the urban areas (Mpuga, 2004). The Nigerian Financial sector serves mainly larger, well connected enterprises. Private, small and medium-sized businesses (SMEs), though generally do have access to bank loans, try as hard as they can to avoid borrowing, because the high level of interest rate is unaffordable relative to their mostly tight profit margins (King, 2003). Generally, the accessibility of a good financial service is considered as one of the engines of economic development. Credit is essential for any business to grow; lack of credit is a barrier to investment and the growth of income of traders. Credit to small and medium enterprises has been an important instrument in fostering the development of industrialization and improving the efficiency of the enterprise as well as expanding productivity. Commercial banks and other formal institutions fail to cater for the credit needs of small holders mainly due to their lending terms and conditions. It is generally the rules and regulations of the formal financial institutions that have created the

myth that the poor are not bankable, and since they cannot afford the required collateral, they are considered not creditworthy.

Despite efforts to overcome the widespread lack of financial services, especially among small holders in Nigeria, the majority still have limited access to bank services. Table 1 shows the declining ratio of commercial bank loans to small scale business in Nigeria. A closer look at the commercial bank total credit and loans to small scale enterprises in Nigeria reveals that there was an increase in total credit of commercial banks (₦48,056.0million), to small scale enterprises (₦15.462.5million) in 1993 to ₦9.4 trillion and ₦15.1 billion in 2010 respectively. During this period ratio of commercial banks' loan to small scale enterprises continue to decline steadily from 32.2% in 1993 to about 0.2% in 2010. Bank loan to SMEs in early 1990s shared about 50% of the total bank credit availability. However, this was not the case in the 2000s after the abolition of mandatory 20% bank credit allocation to SMEs. However, this decline attests to the fact that entrepreneurs, especially in Nigeria, do not have easy access to credit for their entrepreneurial activities and as such have low business performance. Commercial banks were reluctant to give loans to the private sector, especially SMEs, not because the sector is not viable, but due to the perceived risky nature and lack of government guarantee schemes. This implies that financial liberalization policy in Nigeria has not generated enough funds for the development of private sector-led economy and that government objective of using private sector as a catalyst for development may not be easily achieved (Ojo, 2009).

Table 1: Ratio of Loans to Small Scale Enterprises in Commercial Banks' Total Credit

Year	Commercial Bank Loans to Small Scale Enterprises (₦'Million)	Commercial Banks Total Credit(₦'Million	Commercial Banks Loans to Small Scale Enterprises as Percentage of Total Credit %
1992	20,400.0	41,810.0	48.8
1993	15,462.9	48,056.0	32.2
1994	20,552.5	92,624.0	22.2
1995	32,374.5	141,146.0	22.9
1996	42,302.1	169,242.0	25.0
1997	40,844.3	240,782.0	17.9
1998	42,260.7	272,895.5	15.5
1999	46,694.1	353,081.1	13.3
2000	44,542.3	508,302.2	9.7
2001	52,428.4	796,164.8	6.6
2002	82,368.4	954,628.8	8.6
2003	90,176.5	1,210,033.1	7.5
2004	54,981.2	1,519,242.7	3.6
2005	50,672.6	1,899,346.4	2.7
2006	71,896.5	1,847,822.6	3.9
2007	26,981.0	3,155,029.7	0.7
2008	18,824.2	5,453,188.2	0.3
2009	15,825.2	8,791,800.9	0.2
2010	15,106.2	9,358449.7	0.2

Source: Statistical Bulletin, Central Bank of Nigeria Dec.2006 and 2010.

Studies on informal finance in Africa show that they will do well so long as the level of economic activity demands increasing financial services for groups that cannot be reached by the formal financial institutions (Chipeta and Mkandawire, 1992). The emergence of demand for short-term credit especially among traders will most likely lead to the development of an informal unit to meet the demand for credit. The failure of many government-subsidized credit programmes to reach the targeted groups has prompted the emergence of alternative means of administering credit so as to reduce the access problem. In Nigeria, several microfinance institutions (MFIs) have been established and have been operating towards resolving the credit access problem of the poor particularly those who engage in petty business. That informal finance is more important than formal finance has been proven by different approaches used to measure its magnitude in different countries, (Chipeta and Mkandawire, 1992; for Malawi and Aryeetey and Gockel, 1991 for Ghana). An important lesson learned from informal financial institutions is its degree of flexibility and creativity which accounts for the high degree of success.

1.2 Problem Statement

There are multiplicities of views about social capital but the consensus is growing in the literature that social capital stands for the ability of actors to secure benefits by virtue of membership in social networks, groups or other social structures. It is defined as an asset that is engendered via social relations and can be employed to facilitate action and enlarge one's profit (Griffith and Harvey, 2004). The classic resources in economic theory are capital and labour. Capital accessibility is the entrepreneur's perceptions concerned with networking to gain capital funds (Adam, 2003). More resources help to achieve higher performance (Tesfom, 2006). According to Griffith and Harvey (2004), utilizing the firm's social capital can provide performance gains. This allows businesses not only to be more profitable in the short run, but also in the long run (O'Brien and Jones, 1995). One's social network is viewed as a crucial factor for business success (Pearce, 2005; Redding, 1991). Evidence from the works of Crudeli (2005), Reid and Salmon (2000) and Coleman (1988) has shown that social capital has a measurable impact on national economic performance. The use of social capital that is most evident in social structures such as the various networks the traders belong enhances their accessibility to group resources and thus improvement in their trading performances.

Food grains play an important role in Nigeria as staples in many homes. Fafchamps *et al* (2003) noted that the major food grains constitute 80 to 90 per cent of the per calorie consumption of Nigerians. As in many other developing countries, rapid population growth and urban expansion in Nigeria have led to increasing demands for grains. However, grain marketing requires considerable investment of fund in the area of bulk purchase, development of storage facilities and processing facilities. This can be attributable to the seasonality of grain production whereby traders can purchase during harvesting period at lower prices, store or process and sell at higher prices during off-season or lean periods. Many prospective grain traders are often discouraged because of inadequate fund needed for these investments. The inadequacy of fund prevents grain traders from expanding their businesses. Failure of institutional initiatives in providing microcredit to the poor traders in running their enterprises and meeting their financial household requirements gave way to non-institutional sources of credit. Statistics attest that the demand for microfinance financial services remains largely unmet (Zeller and Sharma, 1998; Buchenau, 2003; UNDP, 2004) and one of the reasons is incomplete information equilibrium in credit market (Stiglitz, 1990).

In recognition of the numerous problems posed by inadequate access of small-holder farmers and grain traders to formal sources of credit and high cost of obtaining credit from informal sources, successive Nigerian Government over the years have intervened through a multiplicity of credit institutions. These include Agricultural Credit Guarantee Scheme Fund (ACGSF), specialized agricultural credit bank e.g. Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB) – an amalgamation of Peoples' Bank of Nigeria (PBN), Nigerian Agricultural and Cooperative Bank (NACB) and the Family Economic Advancement Programme (FEAP) - (Now Bank of Agriculture) and stimulating institutional innovations in the financial system e.g. Community Bank, Rural Banking Schemes, Small and Medium Enterprises Equity Investment Scheme (SMEEIS) and a host of other numerous supports to agricultural sector specific programs. In spite of these several programmes put in place, little success has been achieved in the area of credit availability to grain traders as and when required. This hampers volume of sales and ultimately reduces profitability.

Recently in Nigeria both governmental (e.g. Agricultural Credit Corporation) and non-governmental organizations (e.g. Farmers Development Union) are placing more emphasis on the group approach in extending credit to low income borrowers. Social capital is increasingly recognized as a bridge for the gap in credit availability which can lead to improved profitability. Social capital either through its function in social control or accumulation of mutual benefits is critical for successful operation of group lending. Indeed, the mechanisms by which social capital affects credit transactions have been considered in the literature although empirical analysis have been scanty (Olomola, 2000). According to Von Pischke *et al*, (1983), lack of access to credit by poor rural households has negative consequences for agricultural and non agricultural productivity, income generation and household welfare. When social capital networks or relations that affect personal interaction amongst members of a community is included, it facilitates the poor's access to credit and lower its costs, improve welfare by increasing information flow and reduction in transaction costs (Bastelaer, 2000). Social capital as reflected in associational activity may lead to less imperfect information and hence lower transaction costs and a greater range of market transactions which can in turn lead to better outcomes (Narayan and Pritchett, 1999). For instance, social links among borrowers may increase their ability to participate in credit transactions that involve some uncertainty about compliance. Specifically, social capital can lead to a better flow of information between the lenders and borrowers and hence less adverse selection and moral hazard in credit market. Social

capital also potentially expands the range of enforcement mechanisms for default on obligations in environments in which recourse to the legal system is costly or impossible. Research in the area of microcredit programs has, to a large extent, focused on the connection between economic behavior and social relations. The loan mechanisms of microcredit programs depend on the social capital and networks of micro-business owners; social relations are thus essential for the effective functioning of microcredit programs. These also have the potential to increase entrepreneurs' social capital and networking behavior, and contribute to the growth of social relationships and network interactions of the borrowers. The study will enhance the relevance of social capital as a veritable tool for networking among the grain traders in the study area.

In Nigeria, studies have been carried out to investigate the impact of credit on agricultural enterprises (Agom, 2001), credit markets in the Northern Nigeria (Udry, 1990), role of groups and social capital in accessing credit by the poor rural household and on improvement in their welfare (Okunmadewa *et al*, 2005 and Yusuf, 2008); effects of social capital on credit access among cocoa farming households (Lawal, *et al*, 2009), role of social capital in access to microcredit (Ajani and Tijani, 2009), and influence of social capital and microcredit on rural household poverty in Southwest Nigeria (Balogun, 2011). However, these studies have not examined how credit availability through social capital impacts on the profitability of grain traders. The following research questions are of importance for policy relevant results from this study;

- What are the various dimensions of social capital existing among grain traders in the study area?
- Do existing social capital/networks play any significant role in gaining access to different forms of credit?
- What are the effects of microcredit on the profitability of grain traders in the study area?
- Does social capital affect profitability of grain traders?

Answers to these questions will be derived from an empirical investigation of the effects of social capital and microcredit on profitability of grain traders in Southwestern Nigeria.

1.3 Objectives of the Study

The main objective of this study is to examine the effects of social capital and access to microcredit on profitability of grain traders in Southwestern Nigeria. The specific objectives are to:

1. profile the various dimensions of social capital existing among grain traders;
2. examine the effects of social capital on accessing microcredit among the grain traders;
3 determine the effects of microcredit on profitability of the grain traders and
4. investigate effects of social capital on profitability of grain traders.

1.4 Research hypothesis:

The research hypotheses stated in the null are as follows:

1. (Ho): Social capital has no significant effect on grain traders' profitability in south western, Nigeria.
2. (Ho): There is no significant relationship between access to microcredit and profitability of grain traders in South Western, Nigeria.

1.6 Justification of the study

The development of the financial sector matters for economic growth. A large part of the poor population in Nigeria lack access to financial services, which presents a fundamental challenge for the financial sector development in the country. Without credit, investments must be self-financed out of saved earnings. This is in fact the principal source of productive finance in Nigeria (King, 2003). Without access to affordable credit, many are forced into low-investment activities. The result is excessive competition in such activities, and profit margins that are repressed. A growing strand of literature concentrates on studying empirically macro-level patterns and micro-level determinants of households' access to and use of credit services in developing countries. Studies on financial access in developing countries have not considered social capital, understood as the quantity and quality of interpersonal relationship and trust among the determinants of financial access (Heikkila *et al*, 2008). However, there is a recent evidence that social capital plays an important role in the determination of financial development (Fafchamps and Minten, 1998; Olomola, 2002; Guiso *et al*, 2004; Heikkila *et al*, 2008; Ajani and Tijani, 2009). This study will contribute to the literature on social capital through the

illustration of the economic effects of social capital and microcredit on profitability of grain traders.

The literature on networking and social capital (Coleman, 1988; Rosenthal, 1996; Narayan and Prichett 1999; Grootaert and Narayan, 2000) has not been systematically connected to group-based microcredit programs; examining this connection is important for several theoretical and practical reasons; firstly such research can help bridge the gap between literature on micro credit programs and group based structure and the literature on networking and social capital. Secondly, an investigation of the relationships between attributes of microcredit programs, social capital, and networking integration and business performance can help identify avenues to increase the effectiveness of such programmes. Thirdly, knowledge of the characteristics of microcredit programs that help increase social capital and business performance can be especially helpful to public agencies, nongovernmental organizations, international donors and ultimately to low income business owners. Studies (Szreter, 2000; Putnam, 2000 and Reid and Salmon, 2000) on social capital has amply demonstrated the importance of social capital in the context of development projects and the provision of various services, it has not yet demonstrated what the implications of the presence of social capital are for the profitability of traders and whether social capital enhances trading performance or not.

Studies have been carried out on social capital and household welfare within and outside Nigeria (Grooteart, 1999, 2005; Yusuf, 2008). Furthermore, other studies have been done on social capital and poverty reduction within and outside Nigeria (Knack, 1999; Grootaert, 2005, Okunmadewa *et al*, 2005and Balogun, 2011). However, studies empirically linking social capital with access to microcredit are scanty in general and particularly in Nigeria with notable exception of Olomola, 2002 and Mabogunje *et al*, 2004. The focus had been on credit management strategies, credit default/ delinquency and repayment pattern. Literature contains an impressive and growing number of case studies which document that local association plays a key role in successful project design and in determining project sustainability (Narayan and Pritchet, 1999; Grootaert and Narayan, 2000). This has been demonstrated in almost all parts of the world and in sectoral setting ranging from irrigation and water supply, implementation of health services programmes, to the provision of credit to the poor (Isham *et al*, 1995; Grootaert, 1997, 1998, 1999, 2000 and Bastelaer, 2000). In Nigeria, the rich and the poor are enterprising and industrious. But the poor who form the bulk of the population do not have access to formal banking services and they rely heavily on formal and informal microfinance institutions for credit.

The social capital of poor members can act as a substitute for their lack of physical or financial capital. Thus an empirically determined effect of social capital and microcredit on profitability will provide an indication of what policy recommendations are necessary to improve microcredit access and profitability of grain traders.

This study also distinguishes itself from other past studies in Nigeria like (Olomola, 2002, Ajani and Tijani, 2009, Lawal *et al.,* 2009, and Balogun *et al.*, 2011) in terms of its objectives, methodology, study area and the scope of the study. These earlier studies dealt with farming or rural households in one or two Local Government Areas within a state. This study, however, deals with grain traders in two selected states in the South Western Nigeria. The impact of social capital has been recognized in the microfinance context, but most of the empirical applications have studied the effect of social capital on repayments in group lending (Sharma and Zeller, 1998; Bastelaer and Leathers 2006; Cassar, Growley and Wydick, 2007; Karlan 2007). So far no known study has addressed the effects of social capital and microcredit on profitability of grain traders in Nigeria.

Based on the available literature, Southwestern zone was chosen for the study because of the dearth of studies relating to effect of social capital and microcredit on profitability of grain traders. In addition, with inability of formal and informal financial sector to provide traders with needed credit, it becomes very interesting for the study like this to be undertaken in order to improve upon past studies such as Olomola (2002) and Adeyeye (2001). Furthermore, it is expected that this study will enable us to gain an insight into accessibility of traders to credit in order to know the different credit sources that are available to them and how their profitability is enhanced.

The study is also appropriate when considered from methodological point of view. Most empirical studies on microcredit used the Ordinary Least Square (OLS). This study has distinguished itself by employing Multinomial Logit (MNL) for determination of credit accessibility because there are many alternative sources opened to the traders and also for its computational ease when compared to the logit or probit model used by other studies. The problems of heteroscedasticity which often present in cross sectional data are avoided in multinomial logit model.

In Nigeria, studies on relationship among the three terms (social capital, microcredit and profitability) are not known despite all the resources that government has committed to research efforts. Even then, most recent studies either link social capital or microcredit to poverty or social capital to microcredit or social capital to welfare among

farmers and/or farming households but this study distinguishes itself to establish the relationship among the terms focusing the grain traders. This study tries to fill the gap in the literature and to provide empirical evidence in SouthWestern Nigeria.

1.7 Organisation of the Report

The remainder of the report is in four chapters. Chapter Two presents a detailed Review of Literature. Chapter Three deals with the Methodology of the Research, including description of the study area, sampling procedure and analytical techniques. Chapter Four presents the Results of the Study while Chapter Five concludes the Report.

CHAPTER TWO

LITERATURE REVIEW

This chapter presents the basic theory, concepts and interconnection between social capital, microcredit, and profitability of grain traders as well as some of the basic models employed in the study. It also covers comprehensive review of empirical literature on social capital, microcredit, entrepreneurship and profitability.

2.1 Theoretical Framework

2.1.1 Capital accumulation theory

The very basic formula of capital accumulation, outlined by Marx (1885, 1992) in the second volume of *Capital*, draws on how capital is circulated through several key phases:

M — C (Lp/Mp)…P (v/c)…C' — M'…….. (2.1)

The accumulation of capital is obtained by the circulation of capital, where money (M) is transformed into commodities (C) by the purchase of labour power (Lp) and means of production (Mp). To secure accumulation, the money needs to be greater in the end of the process than in the beginning, which means that the value of the produced commodity is higher than the value of the commodities used as inputs. In the production process the value of labour power and the means of production take the form of productive capital (P) when attached to the produced commodity. The value of labour force (v) equals the costs of the labour power bought (wages) and the value form of means of production (c) equals the cost of the means used (constant capital). So, surplus value is generated when the commodity is sold at a higher price than the costs of production, which is made possible by surplus labour (unpaid labour time). So what basically creates surplus value is the amount of labour time that is not paid for by the capitalists. When the produced commodity (C') is sold, capital once again enters the process of circulation in the form of (new) money (M'), and; the process of capital accumulation is thereby maintained

Marx's theory of capital accumulation is highly complex and detailed, but it is still possible to simplify it without losing too much of its inner nature. Under ordinary circumstances, capital accumulation is secured through expanded reproduction. In this process of reproduction, not only commodities and surplus value are reproduced, but also the whole relationship between capital and labour – between capitalists and wage labourers (Marx, 1967/1990). And since surplus value relies on the exploitative relation

between capital and labour force, the circulation of capital is ultimately the reproduction of exploited wage labour by capitalists. The commodity labour power (Lp) is subordinated to processes of absolute or relative exploitation. The former refers to the extension of the amount of time each worker needs to put in, and the latter to the intensification of the labour process (Mosco, 2009).

Following the Harrod – Domar model, the savings ratio (s) and the capital coefficient (k) are regarded as critical factors for accumulation and growth, assuming that all saving is used to finance fixed investment. The rate of growth of the real stock of fixed capital (k) is:

$$\frac{\Delta K}{K} = \frac{\frac{\Delta K}{Y}}{\frac{K}{Y}} = \frac{s}{k} \quad \text{..... (2.2)}$$

Where Y is the real national income, If the capital-output ratio or capital coefficient ($k = \frac{K}{Y}$) is constant, the rate of growth of Y is equal to the rate of growth of K. This is determined by s (the ratio of net fixed investment or saving to Y) and k.

However, as Keynesian economics points out, savings do not automatically mean investment (as liquid funds may be hoarded for example). Investment may also not be investment fixed capital

In Karl Marx's economic theory, capital accumulation refers to the operation whereby profits are re- invested increasing the total quantity of capital. Capital is viewed by Marx as expanding value, that is, in other terms, as a sum of money that is transformed into a larger sum of money. According to Marx, capital accumulation has a double origin, namely in trade and in expropriation, both of a legal or illegal kind. The reason is that a stock of capital can be increased through a process of exchange or "trading up" but also through directly taking an asset or resource from someone else, without compensation. David Harvey calls this accumulation by dispossession. Marx does not discuss gifts and grants as a source of capital accumulation, nor does he analyze taxation in detail. The continuation and progress of capital accumulation depends on the removal of obstacles to the expansion of trade, and this has historically often been a violent process. As markets expand, more and more new opportunities develop for accumulating capital, because more and more types of goods and services can be traded in.

All economists in the world have widely accepted that both physical and human capital accumulation are powerful determinants of economic growth (Haque *et al*, 2007).

This study develops a growth theory that captures the endogenous replacement of physical capital accumulation by human capital accumulation as a prime engine of economic growth in the transition from the industrial revolution to modern growth. The proposed theory offers a unified account of the effect of income inequality on the growth process of the currently advanced economies during this transition. It argues that the replacement of physical capital accumulation by human capital accumulation as a prime engine of economic growth has changed the qualitative impact of inequality on the process of development. In the early stages of the industrial revolution, when physical capital accumulation was the prime source of economic growth, inequality enhanced the process of development by channeling resources towards individuals whose marginal propensity to save is higher. In the later stages of the transition to modern growth, as human capital emerged as a prime engine of economic growth, equality alleviated the adverse effect of credit constraints on human capital accumulation and promoted the growth process. As wages increase, however, credit constraints become less binding, differences in the marginal propensity to save decline and the aggregate effect of income distribution on the growth process becomes therefore less significant.

2.1.2 Entrepreneurship theory of Shane

This research is underpinned on the entrepreneurship theory of Shane (2003). The theory postulates that business environment provides opportunity for entrepreneurial activities to those entrepreneurs who could identify them, and their decision to exploit such opportunities leads to the demand for microfinance in terms of resource acquisition.

The theory consists of opportunity discovery, evaluation of the opportunity and the decision to exploit the opportunity. Other elements of the theory include self-employment, business operation and performance. The theory highlighted four operational measures of performance which are survival, growth, profitability/income, and experiencing initial public offering. Survival refers to the continuation of entrepreneurial activity while growth refers to increase in the venture's sales and employment. Profitability refers to new surplus of revenue over cost while experiencing initial public offer refers to the sale of stock to the public (Shane, 2003). Opportunities are created by the institutional or external environment for those entrepreneurs who could identify them to start or improve their businesses and subsequently their welfare (Shane, 2003). Entrepreneurs' ability to identify and tap such opportunities differs between entrepreneurs. It also depends on their ability to access information and willingness to act upon the information in terms of risk: that is

their attitude (Shane, 2003). Individual attributes affect discovery of entrepreneurial opportunity. It is made up of psychological and demographic factors such as motives, attitude to risk, education and training, career experience, age and social status. Changes in business environment such as economic, financial, political, legal and socio-cultural factors also affect discovery of opportunity. For example, income level of the entrepreneur, capital availability, political stability, laws concerning private enterprise and property rights and desire for enhanced social status by the entrepreneur could affect discovery of entrepreneurial opportunity. Exploitation of the opportunity depends on the entrepreneur's level of education, skills or knowledge acquired through work experience, social networks, credit and cost benefit analysis of the business (Shane, 2003). The decision to exploit the opportunity leads to the quest for microfinance; that is acquisition of resources. Acquisition of resources could also lead to opportunity for entrepreneurial activity; that is new business or business expansion. As such, microfinance could only lead to business performance when there is the tendency to engage in new business or business expansion. The appropriate use of acquired resources in terms of business strategy and organizational design could lead to profit performance (Brana, 2008; Koontz and Weihrich, 2006; Salmon, 2009; Shane, 2003).

2.1.3 Financial Development Sector and Economic Growth

The financial sector is all the wholesale, retail, formal and informal institutions in an economy offering financial services to consumers, businesses and other financial institutions. In its broadest definition, it includes everything from banks, stock exchanges, and insurers, to credit unions, microfinance institutions and money lenders (DFID, 2004). Liang and Reichert (2007) noted that endogenous financial development results directly from economic growth. As an economy grows; the aggregate demand for goods and services increases. To expand output, producers must look for efficient ways to raise capital. Consumers, on the other hand, will seek more efficient means to earn higher rates of return on their savings. Consequently, a more efficient financial market is required. According to the endogenous growth theory all these functions of financial sector can effectively lead to increase in the rate of economic growth.

In the last two decades, the link between Financial Intermediation (FI) and economic growth has generated a great deal of interest among academics, policy makers and economists around the world. Several studies have addressed the potential links between financial development and economic growth (Levine, 1997). Alternative views

on the links between financial intermediation and economic growth focus on the key functions of financial systems in the saving-investment-growth nexus. These include firstly, acting as an effective conduit for channeling funds from surplus to deficit units by mobilizing resources and ensuring an efficient transformation of funds into real productive capital. Secondly, financial intermediation transforms the maturity of the portfolios of savers and investors, while providing sufficient liquidity to the system as the need arises. The third function is risks reduction from the system through diversification and techniques of risk sharing and pooling (Nissanke and Stein 2003). By so doing a modern financial system may spur economic growth. However, despite the rapidly growing literature, the debate concerning the role played by the development of financial intermediaries in economic growth is far from settled. Economists disagree sharply about the role of the financial sector in economic growth. Finance is not even discussed in a collection of essays by the "Pioneers of Development Economics" (Meier and Seers, 1984), including three Nobel Prize winners. Nobel Laureate Robert Lucas (1988) dismissed finance as an "over-stressed" determinant of economic growth. Joan Robinson (1952) famously argued that "where enterprise leads, finance follows." From this perspective, finance does not cause growth; finance responds to changing demands from the "real sector." At the other extreme, Nobel Laureate Merton Miller (1988) argued that, the idea that financial markets contribute to economic growth is a proposition too obvious for serious discussion. However, most empirical studies usually conclude that development of the financial sector accelerates economic growth (Levine, 1997; Thiel, 2001; Wachtel, 2001). Pagano (1993) suggested three ways in which the development of financial sector might affect economic growth under the basic endogenous growth model. First, it can increase the productivity of investments. Second, an efficient financial sector reduces transaction costs and thus increases the share of savings channeled into productive investments. Third, financial sector development can either promote or decline savings.

Research that clarifies our understanding of the role of finance in economic growth will have policy implications and shape future policy-oriented research. Information about the impact of finance on economic growth will influence the priority that policy makers and advisors attach to reforming financial sector policies. Furthermore, convincing evidence that the financial system influences long-run economic growth will advertise the urgent need for research on the political, legal, regulatory, and policy determinants of financial development. In contrast, if a sufficiently abundant quantity of research indicates that the operation of the financial sector merely responds to economic development, then this will

almost certainly mitigate the intensity of research on the determinants and evolution of financial systems. A large amount of literature shows that financial systems can reduce the costs of acquiring information about firms and managers, and lower the cost of conducting transactions. By providing more accurate information about production technologies and exerting corporate control, financial sector development can enhance resource allocation and accelerate growth (Ahmad and Malik, 2009). Similarly, by facilitating risk management, improving the liquidity of assets and reducing trading costs, financial development can encourage investment in high return activities (Levine, 1997).

2.2. Conceptual Review

2.2.1 Social Capital as a Concept in Development Studies

While there are many definitions and interpretations of the concept of social capital, there is also a growing consensus that social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures (Grootaert, 2005; Darlauf, 2002; Narayan and Pritchett, 1997 and Portes, 1998) There are many and sundry applications of the concept but the concern here is how networks and norms are translated into an economic asset. How do social interactions become economic 'capital'? The term encompasses those social relationships that help people to get along with each other and act more effectively than they could as isolated individuals. In this view, patterns of social organization, especially trust, mutuality and reciprocity, are seen as important resources, which can result in benefits to individuals, groups and society. It is in the last mentioned category, the public–good nature of social capital, that the term has recently engendered a lively discourse in international development circles. In a narrower, but commonly accepted sense, mutually beneficial cooperative behavior is the essence of the social capital concept. Social capital is the cumulative capacity of social groups to cooperate and work together for the common good (Montgomery,1998). Coleman (1990) identified social capital as a resource that accrues to individuals, by virtue of their access to contacts, connections, and linkages. A well connected person especially one of high status, is seen as having more of it, by converting these relationship to value to himself.

Social capital is about the value of social networks, binding similar people and bridging between diverse people with norms of reciprocity (Dekker and Uslaner, 2001; Uslaner 2001)

The commonalities of most definitions of social capital are that they focus on social relations that have productive benefits. The variety of definitions identified in the

literature stem from the highly context specific nature of social capital and the complexity of its conceptualization and operationalization. Because of the difficulties in defining social capital, authorities tend to discuss the concept, its intellectual origin, its diversity of applications and some of its unresolved issues before adopting a school of thought and adding their own definition (Adam and Roncevic 2003). Other authors have identified that definitions vary depending on whether they focus on the substance, the sources, or the effects of social capital (Robison *et al* 2002). Grootaert and Van Bastelaer (2002) supported this view identifying that the main cause of the variance in definition is caused by focusing on the form, source or consequence of social capital. Social Capital is seen as the raw material of civil society. It is created from the myriad of everyday interactions between people. It is not located within the individual person or within the social structures but in the space between people. It is not the property of the organization, the market or the state, though all can engage in its production. Durlauf and Fafchamps (2005) defines social capital as the informal forms of institutions and organizations that are based on social relationships, networks, and associations that create shared knowledge, mutual trust, social norms, and unwritten rules.

The term has been one of sociology's most successful exports, finding its way into political science, economics, and anthropology. While the meanings and usage of the concept in its incarnation can be traced to the work of sociologists and anthropologist, the most notable appropriation and usage of the concept by the international policy makers, perhaps is by the World Bank. Many critics of the IMF/World Bank directed development policies have focused on the impact of such policies of local communities; in the case of infrastructure projects for example, large-scale involuntary resettlement tends to result in disarticulation of communities and networks. Social capital issues are now therefore afforded the importance in resettlement and mobilization programmes. Over the past few years, there has been a substantial increase in research on the impact of social capital. However because of its multifaceted nature and the difficulty of measuring and quantifying it, social capital lacks a precise definition. Putman, who popularized the concept of social capital, defines it as "networks, norms, and trust that enables occupants to act together more effectively to pursue share objectives" (Putnam, 1996). Social capital represents the degree of social cohesion in communities. It refers to the process between people that establish networks, norms and social trust, and facilitate coordination and cooperation for mutual benefit (WHO, 1998). Social capital can be understood to be a collection of norms, networks or relations that affect personal interaction among members

of the community (Durlauf and Fafchamps, 2004). Social capital encompasses three elements, "a cluster of norms, values and expectancies that are shared by group members; and sanctions (punishment and rewards) that help to maintain the network" Halpern (2005). Lin (2001) defines "social capital as resources that are embedded in social networks and accessed and used by actors for actions."

There is a growing literature on social capital; a number of themes are emerging:

- Participation in networks**:** A key concept of social capital is the notion of more or less dense interlocking networks of relationships between individuals and groups. People engage with others through a variety of lateral associations. These associations must be both voluntary and equal. Social capital cannot be generated by individuals acting on their own. It depends on a propensity for sociability, a capacity to form new associations and networks.

- Reciprocity**:** Social capital does not imply the immediate and formally accounted exchange of the legal or business contract but a combination of short term altruism and long term self interest (Taylor, 1982). The individual provides a service to others or acts for the benefit of others at a personal cost. They do this in the general expectation that this kindness will be returned at some undefined time in the future they might need it themselves. In a community where reciprocity is strong, people care for each other's interest.

- Trust**:** This entails a willingness to take risks in a social context. We act this way based on confidence that others will respond as expected and will act in mutually supportive ways, or at least that others do not intend harm. Fukuyama defined trust as the expectation that arises within a community of regular, honest and cooperative behavior based on commonly shared norms on the part of other members of the community. Those norms can be about deep "value" questions like the nature of God or justice but they all encompass secular norms like professional standards and codes of behavior. All discussion on social capital includes the notion of trust.

Social Norms provide a form of informal social control that remove the need for more formal, institutionalized legal sanctions. Social norms are generally unwritten but with commonly understood formula. They determine what patterns of behavior are expected in a given social context and define what forms of behavior are valued or socially approved.

Bourdieu (1992) believed that social capital is the sum of resources actual or virtual that accrues to an individual or a group by virtue of processing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition. By analogy with notions of physical capital and human capital – tools and training that enhance individual productivity – Putnam, 1995 referred to social capital as features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit. Portes (1998) defined social capital as the ability of actors to secure benefits by virtue of membership in social networks or other social structures. Fukuyama (1997) defined social capital as the existence of a certain set of informal value or norms shared among members of a group that permit cooperation among them.

Nahaplet and Ghoshal (1998) defined social capital as the sum of the actual and potential resources embedded within available through and derived from the network relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets may be mobilized through that network. Woolcock 1998 opined that social capital is the information that must end norms of reciprocity inhering in one's social networks. Montgomery (1998) defined social capital as the cumulative capacity of social groups to cooperate and work together for the common good. It is even claimed that social capital is the "missing link" (Grootaert 1998), partly because it adds a new focus to what is known as "people centered development" and partly because it can be seen as a complement to the more established capital categories (Physical, financial, and human) to explain how development can occur in some situations and not in others. While social capital is not a tangible resource, it is thought to supplement or catalyze the other types of capital to produce better outcomes.

Lin (1999) viewed social capital as rooted in social networks and social relations, and must be measured relative to its root. Social capital can be defined as resources embedded in a social structure; are accessed and or mobilized in purposive actions. By this definition, the notion of social capital contains three ingredients: resources embedded in a social structure; accessibility to such social resources by individuals; and use or mobilization of such resources by individuals in purposive actions. Thus conceived, social capital contains three elements intersecting structure and action; the structural (embeddedness), opportunity accessibility and action-oriented (use) aspects.

One of the most popular definitions of social capital refers to the set of features of social life – networks, norms, and trust – that enable participants to act together more

effectively (Putnam, 1995). Baron and Hannan (1994) complain about the indiscriminate and metaphoric importation of economic concepts into sociological literature and refer to the social capital literature as an example of "a plethora of capitals." Social capital resembles some kinds of capital and differs from others (Araujo and Easton, 1999). To assess the validity of characterizing this resource as a form of capital, the more widely shared characteristics is firstly discussed and then the less widely shared ones. First, like all other forms of capital, social capital is a long-lived asset into which other resources can be invested, with the expectation of a future (albeit uncertain) flow of benefits. Through investment in building their network of external relations, both individual and collective actors can augment their social capital and thereby gain benefits in the form of superior access to information, power, and solidarity; and by investing in the development of their internal relations, collective actors can strengthen their collective identity and augment their capacity for collective action. While some commentators have argued that social capital in larger social aggregates has deep historical roots and, thus, should be treated as an exogenously given "endowment" (Putnam, 1995), it is also, at least under some circumstances, "constructible" through deliberate actions (Evans, 1996; Sabel, 1993). Like all forms of capital, social capital can yield disutilities as well as benefits both for the focal actor and for others.

Second, like other forms of capital, social capital is both "appropriable" (Coleman, 1988) and "convertible" (Bourdieu, 1985). Like physical capital, which can typically be used for different purposes (albeit not necessarily equally efficiently), social capital is appropriable in the sense that an actor's network of, say, friendship ties can be used for other purposes, such as information gathering or advice. Moreover, social capital can be "converted" to other kinds of capital: the advantages conferred by one's position in a social network can be converted to economic or other advantage. Among the several forms of capital identified by Bourdieu, economic capital is most liquid; it is readily convertible into human, cultural, and social capital. By comparison, the "convertibility rate" of social capital into economic capital is lower, since social capital is less liquid and more "sticky" (Anheier, Gerhards, & Romo, 1995; Smart, 1993).

Third, like other forms of capital, social capital can either be a substitute for or can complement other resources. As a substitute, actors can sometimes compensate for a lack of financial or human capital by superior "connections." More often, however, social capital complements other forms of capital. For example, social capital can improve the efficiency of economic capital by reducing transaction costs (Lazerson, 1995).

Fourth, like physical capital and human capital, but unlike financial capital, social capital needs maintenance. Social bonds have to be periodically renewed and reconfirmed or else they lose efficacy. Like human capital, but unlike physical capital, social capital does not have a predictable rate of depreciation - for two reasons. First, while it may depreciate with non-use (and with abuse); it does not depreciate with use. Like human capital and some forms of public goods, such as knowledge, it normally grows and develops with use-for example, trust (which has been argued is a key source of social capital) that is demonstrated today typically will be reciprocated and amplified tomorrow. Second, while social capital sometimes is rendered obsolete by contextual changes (Sandefur & Laumann, 1998) the rate at which this happens is typically unpredictable so that even conservative accounting principles cannot estimate a meaningful depreciation rate.

Fifth, like clean air and safe streets, but unlike many other forms of capital, some forms of social capital are "collective goods" in that they are not the private property of those who benefit particularly true from them (Coleman, 1988). This is of internal, bonding social capital; the use of such social capital is no rivalrous - one person's use of it does not diminish its availability for others - but (unlike pure public goods) its use is excludable - others can be excluded from a given network of relations (Hechter, 1987). The former characteristic makes social capital vulnerable to free-rider problems and the resulting "tragedy of the commons" risks. The latter characteristic means that in examining the significance of a given group's internal, bonding social capital for the broader aggregate of which it is a part, we must consider the nature of that group's relations to others. Leana and Van Buren (1999) describe the difference between the external and internal views as that of a focus on private versus public goods. However, the more accurate term for the internal view is collective goods, since, unlike the case of pure public goods, insiders can exclude outsiders from social capital's benefits; the distinction is important, because one of the defining features of bonding forms of social capital is the associated risk of exclusivity. Note that in contrast with internal, bonding social capital, external, bridging social capital is closer to a private good. Indeed, it can be traded in the form of business "goodwill."

Sixth, some scholars (e.g., Coleman, 1988) have argued that social capital is unlike all other forms of capital in being "located" not in the actors but in their relations with other actors. "No one player has exclusive ownership rights to social capital. If you or your partner in a relationship withdraws, the connection dissolves with whatever social

capital it contained" (Burt, 1992). While it takes mutual commitment and cooperation from both parties to build social capital, a defection by only one party will destroy it. We should note, however, that even in these respects, social capital is not entirely unique. The utility of "network" goods like railways, telephones, fax, and e-mail is also a function of the number and identity of other users. Finally, social capital is unlike other assets that economists call "capital" because investments in its development do not seem amenable to quantified measurement, even in principle (Solow, 1997). Even if the benefits that flow from social capital can be measured, the capital label should be taken somewhat metaphorically as long as the effort involved in building social networks cannot be measured. Fernandez *et al* (2000) quantify the benefits of social capital used by a call centre in recruiting friends of employees. They also claim to identify the investment in the social capital. However, they identify only the bonus paid by the firm to employees whose referrals lead to hires; they do not capture the investment by the employees in creating and maintaining these social ties. It is hard to imagine how the latter could ever be measured, which is Solow's point. In sum, social capital falls squarely within the broad and heterogeneous family of resources commonly called "capital." In some respects, the use of the term is metaphorical, but such metaphorical uses are very widespread, and it is difficult to see what harm they do.

2.2.2 Determinants of Social Capital

The determinants are numerous and varied and there is both a lack of consensus and a lack of evidence to support the propositions. Several influential studies have suggested that social capital's roots are buried in centuries of cultural evolution (Fukuyama 1995; Putnam *et al.* 1993). Aldridge, Halpern *et al* (2002) suggested that the main determinants of social capital include: history and culture; whether social structures are flat or hierarchical; the family; education; the built environment; residential mobility; economic inequalities and social class; the strength and characteristics of civil society; and patterns of individual consumption and personal values.

Social capital thus has two components: it is a resource that is connected with group membership and social networks. The volume of social capital possessed by a given agent depends on the size of the network of connections that he can effectively mobilized (Bourdieu, 1986). It is a quality produced by the totality of the relationship between actors, rather than merely a common “quality” of the group (Bourdieu, 1980). Membership in

groups and involvement in the social networks developing within these and in social relations arising from the membership can be utilized in efforts to improve the social position of the actors in a variety of different fields, voluntary associations, trade unions, political parties, secret societies are modern examples of embodiments of social capital

Differences in the control of social capital may explain why the same amount of economic and cultural capital can yield different degrees of profit and different powers of influence to different actors. Group memberships creating social capital have a "multiplier effect" on the influence of other forms of capital (Bourdieu, 1986 and Coleman, 1988). Pantoja (1999) identified a different set including: family and kinship connections; wider social networks of associational life covers the full range of formal and informal horizontal arrangements; networks; political society; institutional and policy framework which includes the formal rules and norms that regulate public life; and social norms and values. The majority of these claims originate in applied theory and stem from much work done on other concepts such as network analysis, civic society, cultural studies, education, psychology, and many others. Even where empirical research has been performed, the findings have questionable validity.

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2.2.3 Types of Social Capital

One of the most popular definitions of social capital refers to the set of features of social life – networks, norms, and trust – that enable participants to act together more effectively (Putnam, 1995). The following constitute different types of social capital:

Bonding Social Capital: This constitutes horizontal ties between people within social groups. The term "bonding" (Putman *et al* 1993) holds a negative connotation and generally refers to small circles of homogeneous people that do not cooperate with others outside the boundaries of the group. It refers to networks that exist within a group and between people who are similar. This would include ties that exist within a family or between those that speak the same language or those who are of the same ethnic group.

Bridging Social Capital: This constitutes horizontal ties between social groups. According to Putnam *et al* (1993) it is given by horizontal ties shaping heterogeneous groups of people with different backgrounds. The term bridging refers to the ability of such networks to create "bridges" connecting sectors of society that otherwise would have never come into contact. The common claim is that such relationships have positive

effects on the diffusion of information and trust, thus fostering transactions and economic growth.

Linking Social Capital: The term linking social capital according to Knack and Keefar (1997) described ties connecting individuals, or the groups they belong to, to people or groups in position of political or financial power. For example, civil society organizations allow citizens to come into contact with the institutions to carry out advocacy activities through collective action. This kind of network is critical for leverage resources, ideas and information beyond normal community linkages and therefore, may play a significant role for social well- being.While bonding social capital is crucial for "getting by" and bridging social capital is crucial for getting ahead. Linking social capital is crucial for development.

Corporate Social Capital: This constitutes professional associations, labour unions and political parties that pursue the special interests of their members. Organizations can behave pro-socially as well as anti socially (Olson, 1965).

2.2.4 Forms of Social Capital

The important distinction of social capital, developed by Norman Uphoff and Wijayaratna (2000) spans the range from structural manifestations of social capital to cognitive ones (Grootaert and Van Bastelaer 2002). Whether at the micro, meso, or macro level, social capital exerts its influence on development as a result of the interactions between these two distinct types of social capital. Structural social capital facilitates information sharing, and collective action and decision making through established roles, social networks and other social structures supplemented by rules, procedures, and precedents. As such, it is a relatively objective and externally observable construct (Hitt *et al* 2002). Cognitive social capital, which includes shared norms, values, attitudes, and beliefs, predisposes people towards mutually beneficial collective action (Krishna and Uphoff, 2002; Uphoff, 1999). Cognitive and structural forms of social capital are commonly connected and mutually reinforcing (Uphoff and Wijayaratna 2000).

The two forms of social capital can be, but are not necessarily, complementary. Cooperation between neighbors can be based in a personal cognitive bond that may not be reflected in a formal structural arrangement. Similarity, the existence of a community association does not necessarily testify to a strong personal connection among its members, either because participation in its activities is not voluntary or because its existence has outlasted the external factor that led to its creation. Social interaction can

become capital through the persistence of its effects, which can be ensured at both the cognitive and structural level.

2.2.5 The Channels of Social Capital

Any form of capital – material or non material – represents an asset or a class of assets that produces a stream of benefits. The stream of benefits from social capital- or the channels through which it affects development – includes several related elements, such as information sharing and mutually beneficial collective action and decision making as well as reduction of opportunistic behavior. Collier, (1998) suggested that social capital is economically beneficial because social interaction generates at least one of three externalities. It facilitates the transmission of knowledge about the behavior of others and this reduces the problem of opportunism. It facilitates the transmission of knowledge about technology and markets and this reduces market failures in information. Finally it reduces the problem of free riding and so facilitates collective action.

Participation by individuals in social networks increases the availability of information and lowers its cost. The information, especially if it relates to such things as crop prices, location of new markets, sources of credit, or how to deal with livestock disease, can play a critical role in increasing the returns from agriculture and trading. Participation in local networks and attitudes of mutual trust makes it easier for any group to reach collective decision and implement collective action. Social capital is seen in the context of the contributions it makes to sustain development. Sustainable development refers to a process whereby future generations receive as much or more capital per capita as the current generation has available (Serageldin, 1996). Traditionally, these include natural capital, physical or produced capital and human capital, the wealth of nations on which economic development and growth is based. It is now recognized that these three types of capital determine only partially the process of economic growth because they overlook the way in which the economic actors interact and organize themselves to generate growth and development. Fafchamps and Minten (1999) in their study of agricultural traders in Madagascar observed that better connected traders have better information on prices and on credibility of clients, and they enjoy larger sales and gross margins on their transaction as a result. In addition to acting as fora for information exchange, networks and associations facilitate collective action and decision making by increasing the benefits of compliance with expected behavior or by increasing the costs of non – compliance. The literature has identified a number of channels by which social

capital improves efficiency. Most of these channels fall under one or a combination of the following three categories:

Information Sharing: It is a common feature that human beings derive satisfaction from interacting with others. Socializing often involves the transfer of information, even if the purpose of socialization is not to transfer this information. The sharing of information is then a by-product of social interaction, a Marshallian externality. To the extent that the shared information is economically useful, socialization generates a positive externality. In practice, three conditions must be satisfied for social capital to raise Pareto efficiency through the sharing of information: (1) imperfect information must be the source of inefficiency; (2) there are disincentives to spread erroneous information; (3) there are no obstacles to Pareto efficiency other than imperfect information. Even if social capital satisfies the first condition, it may not satisfy the other two. It is also important to recognize that the information sharing benefits generated by social capital can always be obtained in another way. For instance, information sharing can be explicitly organized and budgeted within a large organization, whether public or private (enterprise, NGO). To empirically test the effect of social capital, one should control for the possible presence of such organizations.

Group identity and modification of preferences: One claim often made in the literature is the idea that social capital favours altruism and raises concerns for the common good – the 'touchy – feely" side of social capital. The relationship between altruism and social capital probably has to do with group identity (Akerlof and Kranton 2000). If identification with a group is necessary for preferences to become altruistic and better aligned with common good, efforts to foster a sense of community may naturally be seen as an essential component of social capital by many researchers. This probably explains why community building is often construed as a way to foster social capital. By circulating information, social capital can magnify reputational sanctions. Group identification can also raise guilt for acting against the group's common interest.

Coordination and Leadership: Good leaders may impose efficiency by using the levels of social capital – e.g. by fostering altruistic preference and concern for the common good; favouring group identification; preaching good behavior and making free-riders feel guilty; encouraging mimicking of good behavior through role model and the manipulation of group symbols and representations. (e.g. religion, ideology). This is what practitioners in the field call 'building social capital'. Purposeful coordination can also be obtained through formal rules by which decisions are made and deviance penalized.

2.2.6 Measurement of Social Capital

Like human capital, social capital is difficult, if not impossible, to measure directly; for empirical purposes the use of proxy indicators is necessary. Years of education and years of work experience have a long tradition as proxies for human capital and have proven their value in numerous empirical studies. No such acquired consensus yet exists for the study of social capital, and the search for the best proxy indicator continues. Researchers have used counts of associations or associational memberships, on the one hand, and survey data on levels of trust and civic engagement, on the other. Researchers have also drawn on a number of data sources, including the National Opinion Research Council, General Social Survey and the University of Michigan's World Values Survey. These surveys ask questions about individuals' associational membership, attitudes about trust, and political participation. Glaeser *et al* (2000) raise questions about the reliability of survey data measuring social capital. In a laboratory setting they found that subjects who reported that they are trusting did not cooperate in a standard trust game.

A general criticism of survey methods is that survey responses vary according to the manner in which questions are phrased, and who is asking them. Among other measures, researchers have also used crime rates, voter turnout, volunteering, car-pooling and charitable-giving as measures of social capital. These measures have been used with varying degrees of success, but we contend that a single measure that captures completely a concept with complex and multiple dimensions, such as social capital, may not exist. The approach of this study in dealing with measurement issue follows from the argument that one form of social capital manifests itself in individuals through their participation in associational activities. Researchers have argued that social capital is enhanced when people belong to voluntary groups and organizations.

In particular, Putnam (1993) maintains that participation in political and social activities and collective organizations is the primary means of civic engagement, and credits the economic success of northern Italy, relative to that of southern Italy. He claims that individuals' participation in social and political organizations "instill(s) in their members habits of economic cooperation, solidarity, and public spiritedness" (Putnam, 1993). From an economist's point of view, cooperation and information sharing are facilitated when individuals have the opportunity to interact within organizations. Such activities facilitate information-sharing through repeated interactions and these interactions promote reciprocity. People who belong to such groups tend to trust others who belong to the same group, and they are therefore more likely to cooperate.

Social Capital Initiatives studies revealed that these social capital indicators differ both geographically and sectorally, e.g., measures of membership in associations were found to be relevant indicator in Indonesia, Kenya, and countries of the Andean region, but not in India and Russia where informal networks are more important. Krishna and Uphoff (1999) relied primarily on membership in networks as a measure of structural social capital. Fafchamps and Minten (2000) used the number and type of relations among traders as their main indicator. Paragal, Hug and Gillgan (1999) used a combination of indicators for structural and cognitive social capital. Structural capital is proxied by associational activity; cognitive social capital is proxied by measures of trust and strength of the norms of reciprocity and sharing.

Due to the strong contextual nature of social capital, it is unlikely that it will ever be possible to identify a few "best" indicators that can be used everywhere. Obtaining, a single, true measure of social capital is probably not possible for several reasons, first, the most comprehensive definitions of social capital are multidimensional, incorporating different levels and units of analysis. Second, the nature and forms of social capital change overtime, as the balance shift between informal organizations and formal institution. And third, because no long standing cross country surveys were initially designed to measure social capital, contemporary researcher have had to compile indexes from a range of approximate items (Measures of trust, confidence in government, social mobility etc.).

Rose (1999) separates the analysis of social capital into three alternative approaches.

Situational Themes: Social capital is defined in situational and instrumental terms, i.e. it varies from person to another and from situation to situation. This again implies that social capital cannot be reduced to a single unit of account and then aggregated into a summary statistic characterizing the whole of society (Coleman, 1997).

Social psychological approach: Social capital is a set of cultural beliefs and norms. Supporters of this approach argue that voluntary organizations emerge as a consequence of trust, rather than the reverse i.e. social capital is in essence equal to trust. Social capital varies from person to person but it is situationally consistent (Inglehart, 1997)

Culture theory: Culture is the source of trust and cooperation. Social capital is homogeneous among individuals belonging to the same culture (society), as well as consistent from situation to situation. This implies that it should be very simple to identify social capital for a specific country (Fukuyama, 1995)..

Babb (2005) identifies five main aspects for measuring social capital namely: civic participation (propensity to vote, to take action on local or national issues), social

networks and support (such as contact with friends and relatives), social participation (involvement in groups and voluntary activities), reciprocity and trust (which include giving and receiving favour, as well as trusting other people and institutions) and views about the area (the analysis and interpretation of the social capital measures, and it includes satisfaction with living in the area and problems in the area).

2.2.7 Characteristics that distinguish it from other forms of capital

- Unlike physical capital, but like human capital, social capital can accumulate as a result of its use. Put differently, social capital is both an input into and an output of collective action. To the extent that social interactions are drawn on to produce a mutually beneficial output, the quantity or quality of these interactions is likely to increase.

- Although every other form of capital has a potential productive impact in a typical Robinson Crusoe economy, social capital does not; creating and activating social capital requires at least two people. In other words, social capital has public good characteristics that have direct implications for the optimality of its production level. Like other public goods, it tends to be under produced because of incomplete collective internalization of the positive externalities inherent in its productions.

2.2.8 Attributes with other forms of capital

- It is not costless to produce as it requires an investment at least in terms of time and effort, if not always money – that can be significant

- The key attribute of capital, however, is that it is an accumulated stock from which a stream of benefits flows. The view that social capital is an asset – that is, that it represents genuine capital –means that it is more than just a set of social organizations or social values. On the input side this additional dimension lies in the investment required to create a lasting asset; on the output side it lies in the resulting ability to generate a stream of benefits.

- The Social Capital Initiative case studies - and the empirical literature elsewhere – document that social capital can directly enhance output and lead to higher productivity of other resources, such as human and physical capital.

2.2.9 Social Capital and Trust

The importance of relationships is often expressed by market participants in terms of trust. In this context, trust can be seen as the confidence that economic agents have that the person or firm they are dealing with has a serious business interest in perpetuating the trading relationship (e.g., Fukuyama (1995), Gambetta (1988)). In most cases, trust arises from the process of successful trading itself in the sense that businessmen and women declare trusting 'people they already know', meaning, people they have bought or sold to in the past (e.g., Fafchamps (1996)). Some authors equate trust with social capital (Fukuyama, 1995), some see it as a form of social capital (Coleman, 1988) while some see it as a source of social capital (Putnam, 1993).

Dakhli and de Clercq (2004) categorize trust into two types; generalized and institutions. Generalized trust is related to how much people trust each other. Institutional trust is related to how much people trust organizations and institutions. The first type of trust captures the interpersonal facet of trust, and thus, it can be assumed to reduce uncertainty and facilitate interaction and communication (Sako, 1992; Beugelsdijk and van Schaik, 2005). The second type of trust captures the deterrent aspect of trust (Dakhli and de Clercq, 2004). Deterrence based trust relates to the belief that efficient sanction mechanisms make the breach of contracts amongst actors costly. This, in turn, makes it possible for actors to cooperate and expect reciprocation (Rousseau *et al* 1998; Dakhli and de Clercq, 2004). If people think their organizations or institutions contribute to the mediation of disputes and protect actors against breaches of contracts, they are more willing to interact with other actors. Previous research on trust suggests that trust both within and between organizations lessens the need for tight monitoring and control mechanisms and increases freedom from rigid rules (Quinn, 1979; Dakhli and de Clercq, 2004). This enhances idea generation by facilitating interactions between individuals within organizations and between organizations. According to Knack and Keefer (1997), if organizations within a country have a high level of mutual trust, confidential information exchange can be facilitated with other organizations. This is because the risk that one actor will opportunistically exploit confidential information to the disadvantage of another actor is reduced (Dakhli and de Clercq, 2004). Fukuyama (1995) regards trust and honesty as drivers for reducing transaction costs. Putnam (2000) argues that "a society that relies on generalized reciprocity is more efficient than a distrustful society" and "honesty and trust lubricate the inevitable frictions of social life". Thus, trust is considered one of the core values for social exchange and communication. As argued in Fafchamps (2004), trust may

be understood as an optimistic expectation or belief regarding other agents' behavior. The origin of trust can vary. Sometimes trust arises from repeated interpersonal interactions. Other times it arises from general knowledge about the population of agents, the incentives they face, and the upbringing they have received (Platteau, 1994). The former can be called personalized trust and the latter generalized trust. The main difference between the two is that for each pair of newly matched agents, the former takes time and effort to establish while the latter is instantaneous.

When the ability of the exchange partner is expected to be high, and when the perceptions of his motivation are also positive, trust in the partner is "bonding" or "full as it is defined by some authors (Blois 1999). When the perceptions about the partner's motivations are positive, but those about his ability to produce the desired outcomes are not favourable, this leads to the situation defined by Andaleeb (1992) as "hopeful trust", in the sense that an improvement of the ability of supplier is expected, but the commitment in the relationship is related only to the perception that there is no opportunism in the counterparty. The third category of trust is called "unstable trust", because it results from a positive perception of the other party's competencies, but negative perceptions of his motivations. In these conditions, the relationship is potentially full of conflict. When, finally, both the motivations and the competencies of the other party are perceived as negative, this creates a situation in which trust is transformed into distrust, and the termination of the relationship becomes a realistic possibility.

In most situations, trusting others enables economic agents to operate more efficiently – e.g. by invoicing for goods they have delivered or by agreeing to stop hostilities. Wherever this is the case, generalized trust yields more efficient outcomes than personalized trust. The reason is that for any pair of agents, generalized trust is established faster and more cheaply than personal trust. Fostering generalized trust can potentially generate large efficiency gains. A generalized trust in the society reduced uncertainty and the average transaction costs just like other inputs reducing transactions costs or production costs (Torsvic, 2000) and Zak and knack (2001). It may also be a factor that accounts for the gap of growth performances between regions and even in developed countries and the underdevelopment of the urban and rural areas in the poor countries. (Temple and Johnson, 1998); Temple (2002).

According to Knack and Keefer (1997) lower trust can discourage innovation. In this context, entrepreneur must devote more time to monitoring possible malfeasance by partners, employees and suppliers and spend less time to devote to innovation in new

products or processes. Therefore, an individual in societies with high trust and norms of civic cooperation spend less time to protect them from being exploited in economic transactions and to divert resources in other to protect them. In this case, the costs of monitoring and enforcing contracts are likely to lower raising the payoffs to many investment and other economic transactions. Regarding financial market developments, only few papers have analyzed the role of trust in financial development (Guiso, Sapienza and Zingales (2000)), Calderon, Chong and Galindo (2001) and Hong, Kubik, and Stein (2001).

Guiso, Sapienza and Zingales (2004) found that measures of trust and financial development proxies are highly correlated. Specifically, their study of the north and south of Italy showed that in regions with high levels of trust, individuals have more access to credits, more participation in the stock market and less resort to informal source of finance. Calderon, Chong and Galindo (2001) extended the empirical analysis to a set of countries and found evidence of a significant association of higher levels of trust with financial deepening ratios and more developed stock market after controlling for human capital formation and law enforcement quality. It appears that, in a country specific analysis as well as in cross country level, trust is found to be a significant determinant of financial sector development. In fact, the financing activity is reduced to a credit granting with a promise to pay back the incurred amounts. The success of the financing operation will depend not only on institutional aspects (law enforceability, the respect of the financial contract established between the financer and the financee depends, to a large existent on the attitude of individuals to trust others.

Boulila *et al* 2006 posited that first, the level of trust as a measure of social capital and growth are significantly and relatively correlated; second, a high rate level of trust has also an indirect effect on economic activity through its effect on institutional development. Third, such results are found to be robust statistically with the extreme bound analysis (EBA). It corroborates the fact that an improvement of the social infrastructure with high levels of trust and cooperation between individuals has not only a direct but an indirect effect on economic growth through the development of institutions in the economy.

2.2.10 Social Capital and Financial Access

So far literature on financial access in developing countries has not considered social capital, understood as the quality and quantity of interpersonal relationships and trust, among the determinant of financial access. However, there is recent evidence that

social capital plays an important role in the determination of financial development. Guiso, Sapienza and Zingales (2004) study various aspects of financial development in Italian provinces. They found that the households are more likely to use checks, invest in stocks, have access to institutional credit and use less informal credit in high social capital areas.

It is somewhat surprising that the effect of social capital on financial access has remained unstudied given the importance of social capital in the development literature (e.g. Woolcock and Narayan, 2000). The impact of social capital has been recognized in the microfinance context, but most of the empirical applications have studied the effects of social capital in repayments in group lending (e.g. Sharma and Zeller 1998; Van Bastelaer and Leathers 2006, Cassar, Crowley and Wydick 2007; Karlan 2007). So far no known study using the methodology of household and individual surveys has addressed the relationship between social capital and financial access in developing economies. The lack of financial access is much more a serious problem in developing than it is in developed economies or even in middle- income countries. Therefore, the study of social capital can potentially shed new light on the problems of financial access in developing countries.

One of the reasons why the impact of social capital on financial access in developing countries has remained unstudied may be the unavailability of data sets containing information on both financial access and social capital. For financial institutions, what matters for allowing access to loans, is how trustworthy the institutions perceive potential borrowers to be. Among customers, the use of savings services may depend on their trust towards the financial institutions. Social capital can increase access to both savings and loan service. This is consistent with the findings of Glaeser *et al* (2000), who present empirical evidence on the positive correlations between social connections on the one hand and trusting behavior and trust on the other hand.

From the individual perspective, there are various ways by which social capital may affect the access to financial institutions. Individuals with wider social networks may have informational advantages as they learn from their friends about the possibilities of financial access. On the other hand, financial institutions may also perceive those potential clients that have wide networks to be more trustworthy, especially as those networks may overlap with the existing clientele of the institution. An example of this would be an existing member of a credit cooperative to recommend another member. From the aggregate perspective, we would expect that in situations where people generally trust each other more, the supply of savings and credit services would be enhanced. Guiso *et al*

(2004) argue that social linkages across people are likely to develop this kind of interpersonal trust. Conversely, in situation where interpersonal trust is very low, the moral hazard problems associated with banking may be too large for any financial services to take place, and even individuals who possess a high level of social capital cannot access financial services. Earlier literature has pointed out that in semi formal and informal financial institutions, social capital may be a substitute for other types of capital and improve access in circumstances where formal providers of finance would be unwilling to operate.

2.2.11 Negative Social Capital

The research literature on social capital strongly emphasizes its positive consequences. Indeed it is our sociological bias to see good things emerging out of sociability; bad things are more commonly associated with the behavior of *homo economicus*. However, the same mechanisms appropriable by individuals and groups as social capital can have other, less desirable consequences. It is important to emphasize them for two reasons: first, to avoid the trap of presenting community networks, social control, and collective sanctions as un-mixed blessings; second, to keep the analysis within the bounds of serious sociological analysis rather than moralizing statements. Recent studies have identified at least four negative consequences of social capital: exclusion of outsiders, excess claims on group members, restrictions on individual freedoms, and downward leveling norms. First, the same strong ties that bring benefits to members of a group commonly enable it to bar others from access. Waldinger (1995) describes the tight control exercised by white ethnics—descendants of Italian, Irish, and Polish immigrants—over the construction trades and the fire and police unions of New York. Other cases include the growing control of the produce business by Korean immigrants in several East Coast cities, the traditional monopoly of Jewish merchants over the New York diamond trade, and the dominance of Cubans over numerous sectors of the Miami economy. In each instance, social capital generated by bounded solidarity and trust are at the core of the group's economic advance. But, as Waldinger (1995) points out, "the same social relations that enhance the ease and efficiency of economic exchanges among community members implicitly restrict outsiders." Ethnic groups are not the only ones that use social capital for economic advantage. Two centuries ago, Adam Smith (1979) complained that meetings of merchants inevitably ended up as a conspiracy against the public. The public, of course, are all those excluded from the networks and mutual

knowledge linking the colluding groups. Substitute for "merchants" white building contractors, ethnic union bosses, or immigrant entrepreneurs, and the contemporary relevance of Smith's point becomes evident.

The second negative effect of social capital is the obverse of the first because group or community closure may, under certain circumstances, prevent the success of business initiatives by their members. In his study of the rise of commercial enterprises in Bali, Geertz (1963) observed how successful entrepreneurs were constantly assaulted by job and loan-seeking kinsmen. These claims were buttressed by strong norms enjoining mutual assistance within the extended family and among community members in general (Geertz 1963). The result was to turn promising enterprises into welfare hotels, checking their economic expansion. Granovetter (1995), who calls attention to this example notes that, it is an instance of the problem that classic economic development theory was identified among traditional enterprises. Weber (1965) made the same point when he stressed the importance of impersonal economic transactions guided by the principle of universalism as one of the major reasons for Puritan entrepreneurial success. Thus, cozy intergroup relations of the kind found in highly solitary communities can give rise to a gigantic free-riding problem, as less diligent members enforce on the more successful all kinds of demands backed by a shared normative structure. For claimants, their social capital consists precisely of privileged access to the resources of fellow members. In the process, opportunities for entrepreneurial accumulation and success are dissipated.

Third, community or group participation necessarily creates demands for conformity. In a small town or village, all neighbors know each other; one can get supplies on credit at the corner store, and children play freely in the streets under the watchful eyes of other adults. The level of social control in such settings is strong and also quite restrictive of personal freedoms, which is the reason why the young and the more independent-minded have always left. Boissevain (1974) reports such a situation in his study of village life in the island of Malta. Dense, "multiplex"6 networks tying inhabitants together created the ground for an intense community life and strong enforcement of local norms. The privacy and autonomy of individuals were reduced accordingly. This is an expression of the age-old dilemma between community solidarity and individual freedom analyzed by Simmel (1964) in his classic essay on "The Metropolis and Mental Life." In that essay, Simmel came out in favor of personal autonomy and responsibility. At present, the pendulum has swung back, and a number of authors are calling for stronger community networks and norm observance in order to re-establish social control. This

may be desirable in many instances, but the downside of this function of social capital must also be kept in mind. Constraints on individual freedom may be responsible for Rumbaut's findings that high levels of familistic solidarity among recent immigrant students are negatively related to four different educational outcomes, including grades and standardized test scores. According to this author, "family ties bind, but sometimes these bonds constrain rather than facilitate particular outcomes" (Rumbaut, 1977).

Fourth, there are situations in which group solidarity is cemented by a common experience of adversity and opposition to mainstream society. In these instances, individual success stories undermine group cohesion because the latter is precisely grounded on the alleged impossibility of such occurrences. The result is downward leveling norms that operate to keep members of a downtrodden group in place and force the more ambitious to escape from it. In his ethnographic research among Puerto Rican crack dealers in the Bronx, Bourgois (1991, 1995) called attention to the local version of this process, which singles out for attack individuals seeking to join the middle-class mainstream. Whereas bounded solidarity and trust provide the sources for socioeconomic ascent and entrepreneurial development among some groups, among others they have exactly the opposite effect. Sociability cuts both ways. While it can be the source of public goods, such as those celebrated by Coleman, Loury, and others, it can also lead to public "bads." Mafia families, prostitution and gambling rings and youth gangs offer so many examples of how embeddedness in social structures can be turned to less than socially desirable ends. Thus, Portes and Landolt (1996) criticize the view of social capital that focuses only on positive effects without considering negative ones. In particular, Portes (1998) suggested "exclusion of outsiders, excess claims on group members, restrictions on individual freedoms, and downward leveling norms" (Portes, 1998) as negative effects of social capital. Paxton (1999) and Woolcock and Narayan (2000) also note that higher levels of social capital could restrict individual growth and societal development. The negative impact of social capital embedded in powerful, tightly knit social groups, not accountable to citizens at large, is evidenced, for example, in corruption and cronyism in political and government institutions (World Bank, 1997).

2.2.12 The Role of Social Capital in Entrepreneurship

Research by Aldrich and Martinez (2003) and Audretsch and Keilbach (2004) contended that, theoretically, social capital plays an important role in entrepreneurship. Although a link between social capital and economic performance is supported by some

empirical research (Putnam, 1993, 1995, 2000), Audretsch *et al* (2006) argue that most of the research on social capital and entrepreneurship does not adequately link these two concepts. Thus, it has not been enough to explain the positive contribution of social capital to entrepreneurship empirically. In addition, the term entrepreneurial capital often appears in the literature to represent another form of capital besides physical or human capital (Audretsch and Keilbach, 2004). Sometimes, the definition of entrepreneurship capital is interpreted in a broad sense and, therefore, it includes social capital in its definition, although social capital and entrepreneurship are distinctly different concepts. This unfortunate choice of terminology is problematic because it can be confused with social capital which is generally defined in terms of the trust, group memberships, networks, or norms that people assume for productive purposes.

According to Audretsch *et al* (2006), entrepreneurship capital refers to "[a] milieu of agents and institutions conducive to the creation of new firms. This involves a number of aspects, such as social acceptance of entrepreneurial behavior, individuals willing to deal with the risk of creating new firms, and the activity of bankers and venture capital agents willing to share risks and benefits. Hence, entrepreneurship capital reflects a number of different legal, institutional, and social factors and forces that create a capacity for entrepreneurial activity (Audretsch *et al* 2006). Taken together, social capital and entrepreneurship are different concepts but theoretically, the former contributes to the latter. Based on previous theoretical and empirical research, Thornton and Flynn (2003) argue that social capital impacts entrepreneurship at three different levels of analysis; network ties between individuals; those connecting teams and groups; and those connecting firms and industries. They conclude that social networks make an important contribution to entrepreneurship considering that: networks with cohesion in which trust is fostered are contexts in which information flows easily, characteristics that are central to reducing the risk of investment in innovation. Whether networks connect individuals, groups, or firms to one another, or tie together actors from two or more of these categories, they are contexts that provide the social, financial, and human capital that fosters entrepreneurship (Thornton and Flynn, 2003). The social capital perspective presumes that network ties provide individuals or organizations with access to knowledge and other useful resources (Nahapiet and Ghoshal, 1998; Davidsson and Honig, 2003; Elfring and Hulsink, 2003; Lechner and Dowling, 2003; Batjargal, 2007). Thus, social capital captures the networking between individuals or between individuals and organizations as well as the useful resources which can be drawn from these networks (Hessels, 2008). In addition,

networks not only affect the entrepreneurial process, they also create new opportunities by internalizing other actors' skills (Kogut, 1988; Hamel, 1991). For example, if venture capital firms are members of a network, their participation is a signal of reduced risk for investors (Podolny, 2001).

The literature reviewed thus, shows that entrepreneurs recognize that social network principles can be practical and accessible solutions to start new firms or expand existing businesses (Kim and Aldrich, 2005). Because of the importance of these social networks, many individuals and organizations seeking to take advantage of entrepreneurial opportunities develop social networks with other actors in the knowledge economy. In short, social capital can contribute to entrepreneurship because a high level of social capital can reduce transaction costs between actors, search and information costs, bargaining costs, and decision costs (Maskell, 2001; Landry *et al* 2002).

2.2.13 Concept of Microcredit

Microcredit is the extension of very small loan (micro loans) to the unemployed, to poor entrepreneurs and others living in poverty, who are not considered bankable. These individuals lack collateral, steady employment and a verifiable credit history and therefore cannot even meet the most minimal qualification to gain access to traditional credit. Microcredit is a part of micro finance, which is the provision of financial services to the very poor; apart from loans, it usually includes savings, micro insurance and other financial innovations.

There are two main systems of microcredit (Chauhan, 1990). One is the formal financial institutions, banks and cooperatives which provide microcredit to the poor people under different schemes for livelihood support or in helping them to start micro-enterprises. The other is informal system comprising traditional money lenders, pawn brokers and trade specific lenders. Both systems have their own positive and negative aspects.

The positive aspects of formal financial system are that under this system, microcredit is available at low rate of interest with easy and periodic repayment and moratorium period. The most important aspect of this type of credit is that it is available for income generating activities. But at the same time microcredit from formal financial system is not easily available. The system requires collateral or security. It has complex legal and operational procedures involving a lot of paper work. Since the process of credit disbursement is time consuming, many times credit is not available in time. Finally, there

is a stigma attached to the poor people so that the bankers will not think them credit worthy and feel that the recovery rate is unsatisfactory. But this may not necessarily be true.

The positive aspects of informal system of microcredit are that credit disbursement is easy and relatively quick. No collateral is required and there is less paper work. Credit is generally given for non – productive purposes as well. But at the same time there is very high interest rate in informal microcredit system. Exploitation is also attached with this system. Money lender takes repayment at one time only.

Based on this two systems of microcredit, one can define microcredit as the provision wherein debtor takes money either from formal or informal sources of credit on unilaterally decided terms by the creditor. Microcredit emphasizes the provision of credit services to low income clients usually in the form of small loans for micro-enterprises and income generating activities. It has been argued that microcredit should be called "micro-debt". Certainly the use of the term microcredit is often associated with an inadequate appreciation of the value of savings services to the poor. In most cases, the provisions of savings services in microcredit schemes simply involve the collection of compulsory deposit amounts that are designed only to collaterize those loans. Little efforts may be made to collect additional voluntary savings to which clients may have access. Where clients have restricted access to their enforced savings, these savings also become a source of institutional capital (Floro and Yotopolous, 1991; Bastelaer, 2000).

There are three C's of microcredit program such as, character, capacity and capital (Yunus 2003). Character is explained as the historical records of the borrowers such as, how a borrower has handled his past debt obligations, his or her background, honesty and reliability to pay the credit etc. Capacity is termed as how much debt a borrower can handle easily, his or her income streams etc. Capital means current available assets of the borrower, e.g. borrower's real estate, savings and investment that would help him or her to repay the loan in time.

Microcredit will be the most effective when utilized by those involved in entrepreneurial activities, rather than as a means of coercing the uninitiated into self-employment. Microcredit programs (generally considered to be initiated by the 2006 Nobel Prize winner Mohammed Yunus of Grameen Bank of Bangladesh) work with the lower income micro-business owners and construct alternative means of approving, disbursing and monitoring loans for microcredit businesses. These programs are often run by non- profit organization and funded through private foundations and public sources

although a few programs have become self – sufficient based on user fees and income (Agom, 2001; Tata and Prasad, 2005).

2.2.14 Concept of Profitability

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long run; measuring current and past profitability and projecting future profitability is very important. Profitability is measured with income and expenses. Income is generated from the activities of the business. Expenses are the cost of resources used up or consumed by the activities of the business. Profitability is measured with an "income statement". This is essentially a listing of income and expenses during a period of time (usually a year) for the entire business. An income statement is traditionally used to measure profitability of the business for the past accounting period. Whether one is recording profitability for the past period or projecting profitability for the coming period, measuring profitability is the most important measure of the success of the business. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Profitability can be defined as either accounting profits or economic profits. Accounting profits (taxable income and deductible expenses) provide the intermediate view of the viability of the business. In addition to deducting business expenses, opportunity costs are also deducted when computing economic profits. Economic profits provide a long-term perspective of the business.

2.2.15 Link between Social capital and Microcredit

Microcredit can be described as the idea of loaning very small amount of money to the poor in order to promote entrepreneurial endeavour. Much of the popularity of this idea rests in microcredit's utilization of social capital by organizing borrowers into small groups. Social capital is exploited through "Peer lending" in which borrowers operate with the lender through groups with individual borrower status dependent upon the performance of all group members. Yunus realized that lack of physical collateral among the poor could be successfully replaced by social capital and began operating the Grameen Bank in 1976 as a peer lending institution. This low-cost social capital approach led to the rapid spread of Grameen Bank in and outside Bangladesh and to reports of incredible success with repayment rates usually cited at almost 99% (Auwal, 1996).

Although, there is little doubt that microcredit and social capital are closely linked, there are disagreements about the nature of their linkage. It is often observed that effectiveness of microcredit in a community draws upon its pre-existing social capital, therefore social capital is the independent variable and microcredit is the dependent variable. Again, it is also argued that microcredit operation processes in fact create new social capital and even add with or modify existing stock of social capital in a community (Haque, 2010). It has been argued that routinised activities that form part of microcredit operation like regular meetings among borrowing group members lead to cultivation and creation of social capital (Ostrom, 1994; Anderson *et al* 2002). On the contrary, Rankin (2001) shows that social capital as formed through group solidarity in microcredit, is corollary of profit maximization not social change/transformation as often claimed.

Bastelaer (1999) examined how social capital reduced the cost of imperfect information that is congenital to microcredit. He argued that the main source of social capital was the patron – client trust between loan officers and borrowers. Karlan (2001) found that social capital generates higher repayments and higher savings. Olomola (2000) examined the role of social capital in transforming the rural finance system in south western Nigeria; he noted that relationship based on trust between lenders and borrowers is crucial in developing a sustainable financial system at the grass root level.

Although, group-based microcredit lending programs have been advocated for the past two decades as a means of reducing the costs of microfinance delivery to poor clients, recent interest in social capital in the World Bank and elsewhere has reformulated earlier discussions of group-based delivery in terms of social capital. The latter in the form of indigenous network is perceived as a substitute for financial collateral in the selection of loan beneficiaries and in loan distribution techniques. Given these relationship, it is possible for microcredit programs to design systems that help micro-businesses perform better by focusing on social capital development and configuration (Olomola, 2002; Tata and Prasad, 2005).

Guiso, Sapeienza and Zingales (2004) investigated the link between the level of social capital and financial development in Italian provinces. They opined that one of the mechanisms through which social capital impacts economic efficiency is by enhancing the prevailing level of trust. In high social capital communities, people may trust each other more because the community networks provide better opportunity to punish deviants (Coleman, 1990). At the same time, in high social capital communities people may rely more on others keeping their promises as a result of a moral attitude imprinted with

education. Since financial contracts are trust intensive contracts per excellence, social capital should have major effects on the development of financial markets. In fact, financing is nothing but an exchange of a sum of money today for a promise to return more money in the future. Whether such an exchange will take place depends upon not only the legal enforceability of contracts, but also the extent the financer trusts the financee. Since social capital is an important determinant of the level of trust, it should also affect the level of financial development. Documenting this link can not only shed some light on the mechanism through which social capital contributes to economic prosperity but also provide a new explanation for the widely different levels of financial development across countries. Social capital can affect the use and availability of financial contracts also through its impact on the information available to each member of a community. Since high level of social capital are associated with high level of social interaction, information circulates more where social capital is higher, reducing the asymmetry of information between contracting parties.

"Virtually every commercial transaction- wrote Arrow (1972) – has within itself an element of trust, certainly any transaction conducted over a period of time." In this respect, financial contract are trust intensive per excellence; trust that the counterpart will fulfill the letter of the contract and that he will not breach the fiduciary duty associated with it. This trust can arise from the expectation that the legal enforcement will punish any deviation. Legal enforcement is however expensive and sometimes in effective, legal enforcement can do very little against outright fraud. If the financee squanders the money the law can at best put him in prison but cannot recover it even when effective legal enforcement can be so costly to jeopardize the economic viability of a financial contract.

Finally, contracts are intrinsically incomplete, making it impossible, even for the most effective court system to fully guarantee the investor. Since the legal enforcement can never be fully effective, social capital, according to both definitions, can play a role in enhancing the level of trust. If social capital is the degree of social interaction (Coleman, 1990), then it affects the opportunity to inflict a social sanction to deviants. For example, a broker who defrauded his clients may be ostracized by his community. This provides a non-legal means of enforcement whenever this is ineffective or too expensive.

2.2.16 The Relationship among Social Capital, Microcredit and Profitability.

Social capital is conceptualized in this study as the resources (e.g. information, ideas, support) that grain traders are able to procure by virtue of their relationship with

other people. The relationship among social capital, microcredit and profitability is presented in Figure 2.1. We define a social network as a group of individuals among whom the economic interaction frequency and the social relationship density reduces the moral hazard by differentiating dishonest members from honest members. The first characteristic of a social network is that the information that concerns its members circulates very quickly and reputations are built very rapidly among its members. This specific information structure creates an information asymmetry between members and non-members of the social network. The second is that there is a strong solidarity between members of the social network. Someone who interacts with a member of the network implicitly and indirectly interacts with all of the network's members. Moreover, the individual initiating an action with a member of the network is aware of this implied interaction with the entire network.

The study focused on the relationship between social capital and its direct outcomes (access to microcredit and profitability). In the case of grain trading activities, good network of clients and suppliers constitute social capital that complements the traders' financial, physical and human capital. Lack of credit is a barrier to investment and income growth of traders in developing countries (Fafchamps and Minten, 1999). However, microfinance is a developmental economic system that offers the poor a tool for upward mobility. Loans are extended to worthy individuals who are not able to obtain credits from formal financial institutions because they have been deemed "unbankable" and "unprofitable". The borrowers use the loans to expand their businesses and consequently it will enhance increased profitability.

The relationship between social capital and microfinance is cyclical in that high social capital can increase microfinance activity and microfinance activity can in turn generate social capital (Feigenberg *et al* 2009). Dense and strong network ties create trust among community members, and this trust is necessary for loan and repayment transactions, service quality and other mechanisms of microfinance sustainability. By meeting with loan group members frequently, clients can influence their social networks positively and increase their social capital; they also are more likely to do business with those that live nearby and those they knew before giving out the loans (Feigenberg *et al* 2009). This "business preference" implies that knowing your business partners before business deals are made is an advantage in microfinance. Certainly, high social capital creates better microfinance opportunities.

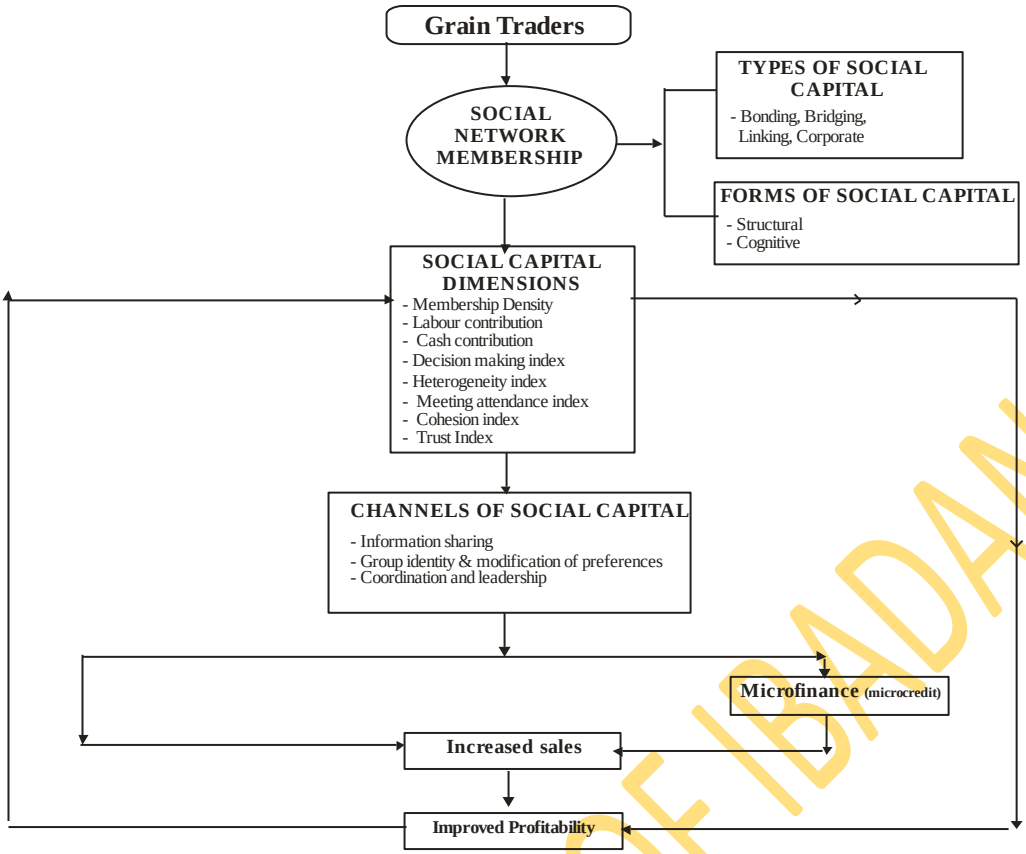

Figure 2.1 Relationship among Social capital, Microcredit and Profitability
Source: Author's construct

2.2.17 The Relationship between Social Capital, Microcredit and Grain Trading

This study also presents a conceptual framework that presents the relationships among financial institution characteristics, personal agency beliefs, entrepreneurial alertness and economic performance. The institutional framework in this study is group oriented. This is so because institutions affect people's cognitive processes and entrepreneurial capacity.

Institutions and economic policies that inhibit economic freedom dampen people's alertness to opportunities through their negative effect on personal agency beliefs that is internal locus of control and personal efficacy (Harper 2003). In this study, grain trading is a form of entrepreneurship which is defined as a function of agency belief (the stronger the agency belief, the higher the entrepreneurial ability of the grain traders), which is affected by locus of control (LOC) and perceived self-efficacy (SE). Agency belief is a multiplicative function of locus of control (contingency) and perceived self efficacy (competence) (Harper 2003). This is likely to be affected by the type of finance available to the grain traders.. Financial institutions have different characteristics, which include their ownership structure, type of credit, savings mobilization, etc. All these characteristics affect the way the financial institutions play their role as a financial mediator and entrepreneurial developer.

Financial institutions give out credit with different characteristics (Zeller *et al* 1997). The characteristics of credit determine what grain traders can use the money for and whether it is going to be accessible to them. Fungibility is the quality of being capable of exchange or interchange, in other words a fungible credit will have the ability to be used either for consumption or production. A credit with huge paper work and heavy collateral may not be accessible to grain traders (Soyibo 1997; Audretsch, Keilbach, and Lehmann 2006) though the credit is fungible. The interest rate is another important issue (Akabueze 2002) and most authors have said that the poor cannot pay the market interest rate so there should be a safety net for them. Risk is inevitable in the business world (Knight 1921) and the ability of credit to insure against unforeseen characteristics is also very important. Finally, a financial institution will be able to sustain its services if their clients pay back their loans, so the default rate as a characteristic of credit will assess the sustainability of the institutions. Wood (2006) also submited that age and source of finance affect business performance. Grain traders have certain characteristics like age, education, gender and managerial ability, which affect their skills, knowledge and attitude (Van Praag 2005). This behaviour can be modified through the effect of credit and their

involvement in social network (Svendsen and Svendsen 2004; Kalantaridis 2004) on self-efficacy, locus of control and thus personal agency belief is improved. The improvement of agency belief leads to better strategies like technology adoption, quality improvement, product innovation and market expansion (Nafziger 1977; Audretsch and Keilbach 2004; Van Praag 2005). All these strategies will lead to better performance of grain traders.

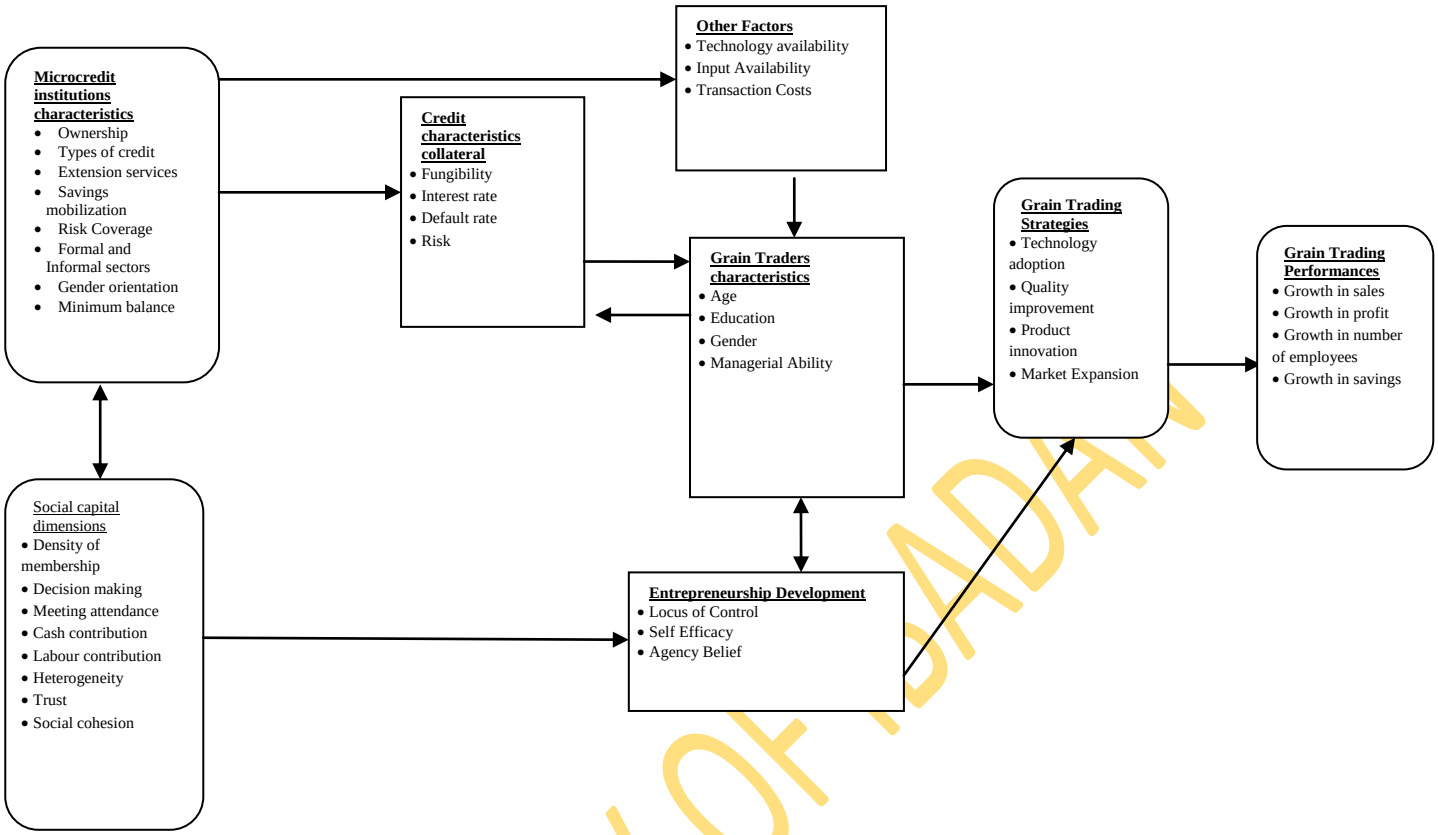

Figure 2.2: The Relationship between Social Capital, Microcredit and Grain Trading Performance. Adapted and modified: (Adekunle, 2007).

2.3 Methodological Review

2.3.1 Impact of credit on agricultural enterprises

Agom (2001) analyzed the impact of microcredit on performance of agricultural enterprises in Cross Rivers State, Nigeria. He used the ordinary least square multiple regression, discriminant analysis, simple descriptive statistical tools and ANOVA for the study. The results indicated that there was a significant difference in interest rate; loan duration and disbursement lag among microcredit sources. There was a significant difference between the mean returns of credit users and non–users, with non-users having higher returns. Loan amount was found to have a significant positive contribution returns but users failed to harness this optimally. There was therefore increased mean total cost due to interest payment without a corresponding increase in total investment as most times the loans were used outside the farm business. Savings, education and number of dependants discriminated between users and non-users.

Fabiyi and Osotimehin (1984) studied the impact of credit on rice production in Ondo and Oyo States. They used the ordinary least square (OLS) multiple regression model to determine the influence of amount of loan on output of rice and revenue accruing from rice in the area. The results showed that the linear model satisfactorily fitted the relationship in line with *a priori* expectations. The amount of loan taken was found to have a positive contribution to both output and income. They therefore called for better and dependable credit and marketing system to be used by rice farmers in Ondo and Oyo States.

Similarly, Yazdani and Guanjal, (1998) used regression and discriminant analyses to measure the impact of agricultural credit and factors that influence the use of loans by farmers in Iran. The results showed that the linear function fitted the data such that the independent variables explained 65% of the variation in level of investment in the last ten years. All variables had positive signs as expected except non-farm income, which may have been due to investments outside the farm with the off-farm income. The discriminant analysis showed that the performance of borrowers was significantly higher in terms of area cultivated and output. This was explained by the adoption and use of better inputs. Among the factors discriminating between borrowers and non-borrowers were experience, age, education, income and training all of which had high coefficients. The discriminant function was able to correctly classify 96.5% of respondents into borrowers and non-borrowers. The study concluded that formal sources tended to give large loans to farmers with large farms, as bank managers used farm size as a criterion for distribution of credit.

This information could be used to increase credit use and increase agricultural productivity and income of farmers.

Yazdani (1995) used the production function to measure the impact of credit. This was done by fitting a production function for borrowers, non-borrowers and pooled sample respectively. The chow test was also carried out to measure the significance of differences in production function and efficiency between borrowers and non-borrowers. The results showed that the borrowers' production function had a neutral upward shift (equal proportional change) when compared to the function for non-borrowers. The functions therefore differed in terms of slope or marginal productivity of inputs. The borrowers also cultivated larger plots. However, the returns per unit land cultivated did not show any significant difference.

Isijola (2000) studied the impact of financial sector reforms on the supply and demand for agricultural credit in Nigeria. The study examined the structure of loans supplied to the agricultural sector before and after the reforms period. The reforms were government policies. The study used ordinary least square regression to analyse the determinants of commercial banks' agricultural credit demand and supply for the pre-reform and reform periods. The results showed that during the pre-reform period there was consistent increase in the nominal amount of loans and advances to the agricultural sector. There were however, fluctuations in the amount in terms of agriculture share in the overall economy and fell short of the prescribed minimum to the agricultural sector except in 1979. During the reform period on the other hand, the prescribed minimum allocation for agriculture was overshot steadily until the later years when the target was not met. This was attributed to the liquidation of many commercial banks during the period.

2.3.2 Multinomial logit model as a tool in credit access

The multinomial logit (MNL) model is probably the most popular random utility model, due to its relative simplicity (Bierlarie, 2007). Random utility models are derived from the concept of utility maximization. Decision makers are assumed to be rational, and to perform a choice in order to maximize a quantity, called utility, associated with each of the alternatives under consideration. The utility is modeled by a random variable, in order to account for the many sources of uncertainty in the decision process itself, and in the methodological assumptions. Discrete choice models are based on the assumption that the set of alternatives considered by the decision-maker, or choice set, is finite and discrete. Disadvantage of the multinomial logit model is that the ratio of probabilities of any two alternatives is independent from the choice set. The multinomial logit model is

characterized by what is called the Independence from Irrelevant Alternatives Property. This property implies that even when two alternatives are close substitutes, the multinomial logit model assigns equal probabilities to all alternatives. If, for instance there is a choice between 1, 2 and 3, where 1 and 2 are almost similar, one would expect the probability of choosing 3 to be almost 50 per cent and the probability of 1 or 2, irrespective of the choice between 1 or 2, to also be almost 50 per cent. However, the multinomial logit model assigns probabilities of 1/3 for all three alternatives. Hence, the multinomial logit model will be inappropriate whenever two or more of the alternatives are close substitutes.

The use of multinomial logit provides a good approximation and a computational advantage when compared to the probit or tobit model (Jaccard, 2001). Multinomial logit models, nevertheless, have been common in testing hypotheses about borrowing and lending decisions (Nagarajan, 1992; Esguerra, 1993; Sanchez-Schwarz 1996). Sanchez-Schwarz (1996) used a multinomial logit model to test for the assortative matching of borrowers and lenders in the rural credit markets of Mexico. Her model classifies rural entrepreneurs into six mutually exclusive classes: non-borrowers, recipients of commercial credit, those engaged in sales with down-payments, and those dealing with formal lenders, money lenders, and friends and relatives, respectively. Rural entrepreneurs are then classified with respect to the category of lender that supplies the largest transaction in terms of loan size. Because the logit models require the categories of the dependent variable to be mutually exclusive and exhaustive, it is assumed here that borrowers with access to lenders along the higher end of the continuum of lending technologies also have access to lenders along the lower end of the continuum. This is a plausible assumption, as lenders at the higher end of the continuum usually have stringent requirements to assess the creditworthiness of potential borrowers. Those who can meet these requirements can be safely assumed to fulfill the requirements of lenders requiring less formal ways to evaluate the creditworthiness of applicants. Esguerra (1993) used the multinomial logit approach to determine if the observed matching of trader-lenders and farmer-lenders among the different types of rural households is a predictable outcome of the economic actions of these agents, by using data from four rice growing villages in the Philippines. Esguerra (1993) groups the sample of households from The Philippines into five categories: households with no lender (non-borrower), with a farmer lender, with a trader lender, with any other kind of informal lender, and with a formal lender.

Estimation of the multinomial logit model implies that we can have different base categories, for example we may want to compare accessibility to credit from Traders' Association versus Cooperative or ROSCAS, etc. The calculation of odds ratio of all the other responsive categories was done relative to the base line that is the coefficient of probabilities. An odds ratio equal to 1 suggests that the explanatory variable leaves the dependent variable unchanged. If the odds ratio is greater (less) than 1, it implies that the effect of explanatory variable is to increase (reduce) the dependent variable (Long, 1997) for example, an odds ratio of 2 implies that the effect of the explanatory variable is to double the dependent variable. The advantage with this is that the factor change in odds for a unit change in each explanatory variable is not dependent on the level of the variable or the level of any other variable (Long, 1997). The positive coefficient implies the probability of respondent falling in the numerator category or odds are greater than the probability of falling in base category.

The review shows the importance of social capital in the different facets of human endeavour. However, empirical investigations of the various dimensions of social capital and effects on profitability has not been given due consideration in Nigeria. This study intends to fill this inherent vacuum by carrying out an empirical analysis of the effects of social capital on profitability of grain traders using south west state of Nigeria.

2.4 Empirical Review

2.4.1 Social Capital and Microcredit

Despite the success of Microfinance, with a few exceptions, literatures had ignored the social capital impact on Microfinance credit program participation. That lack of attention is changing slowly because the concept of social capital is now been used at several levels in microfinance literature. The area where it has been used most frequently is that of information asymmetric alleviation. The success of the programs of microfinance as Grameen Bank in Bangladesh, Bancosol in Bolivia relies heavily on the notion that borrowers can utilize their social capital to overcome many of the problems associated with asymmetric information in credit markets for example, adverse selection, moral hazard, state verification, and contract enforcement (Gomez and Santor, 2001).

Literatures suggest that the use of existing ties improves accessibility to credit. Social capital defined by Putman (1993) as "features of social organization, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated actions," is thought to be particularly valuable in low-income countries where formal

insurance is largely unavailable and institutions for contract enforcement are weak. Consistent with this idea, Guiso *et al (*2004) found that in Italy, the level of social capital has higher investments in the stock market and more access to formal financial institutions. Similarly, Hong kubik and Stein (2004) found that in the United States "people who knew their neighbor" have higher stock market participating rates.

Bastaeler (2000) observed that social capital is the solution of information uncertainties in finance market for the poor. He informs that many credit programmes for the poor based on individual collateral saw low repayment as the incentives structure was weak and the delivery process was mired in bureaucratization and politicization. However, microcredit based instead on social collateral where social capital becomes instrumental for microcredit. Generally, bonding and bridging social capital through horizontal social networks are most visible in microcredit. He identifies two main elements: joint liability for loans of small self-selected and homogenous borrowers' groups and "contingent renewal principle" or denial of access to future credit to all group members in the case of default by any group members.

Bastaeler (2000) opined that credit arrangements rely on several classes of social capital identified as horizontal, vertical and ethnic based relationship. Grameen Bank relies on the horizontal network of borrowers. The money lenders which are often another source of credit to the poor in developing countries especially in rural areas rely on hierarchical social interaction, a reminiscent of the vertical dimensions of Coleman's (1988) definition of social capital. Bastelaer (2000); Grootaert and Van Bastelaer (2002); Grootaert (1999 and 2001) presented evidence that social networks are important elements of most types of formal; or informal programmes that provide credit access to the poor through the implementation of relationship between programme officers and borrowers (on trust) and vertical social ties between programme, traditional patrons and clients (loan officers). Grootaert (2001) reported that membership and active participation in other local associations whose prime objective is not financial also contribute to credit access. This is perhaps the sense in which social capital is truly "social" in that the building of trust and network among members in the context of a social setting spills over into financial benefits. This interpretation of social capital has being proposed by several authors such as Putman (1993); Dasgupta (1988); and Fukuyama (1995).

Seibel (2000) studied the relationship between social capital and microfinance in the Philippines. He evaluated the effectiveness of using Grameen type norms such as regular attendance in the meeting, insistence on timely repayment, etc among Grameen

replications in the Philippines. The author concluded that successful replicators use "hard core social capital of the original Grameen approach" – high moral commitment of leaders based on values enforced true training, peer selections and peer enforcement, and credit discipline. However he suggested that to be successful, microfinance institutions (MFIS) in the countries outside of Bangladesh need to cultivate additional and localized dimensions of social capital. Using data collected from FINCA, Peru Karlan (2001) found that social capital helps members distinguish between willful defaults and defaults due to the true negative personal shocks and that social capital generates higher repayment and higher savings. In the case of Indonesia, Grootaert (1999) concluded that household with higher social capital are better able to obtain credit than non-members and the obtained credit amounts were much larger. All local associations whatever its prime objectives are important to increase access to credit. As argued by Bastelear (2000), the social networks are important elements of most type of formal or informal programs that provide credit access to the poor.

Ajani and Tijani (2009) examined the role of social capital in access to microcredit in Ekiti State and found that aggregate social capital index positively affects the probability of members of networks obtaining microcredit. The study supports findings that in addition to information and other benefits derived from networks, it can be a source of obtaining credit; belonging to networks or associations, the study posits, will improve the probability of access to credit for members, which can be channeled towards improving their livelihood activities. In the same vein, Lawal *et al* (2009) studied the effects of social capital on credit access among cocoa farming households in Osun State and revealed that a unit increase in social capital would increase credit access of cocoa farming households by 0.36%.

Heikkila *et al* (2009) in their study on social capital and credit access in Uganda found that individual-level social capital is positively associated with access to loans and as regards organizational choice, they found that social capital is an important borrower screening device for more informal financial institutions. Furthermore, their results suggest individual social capital is positively associated with access to institutional loans, and it matters more for poorer and less educated people; and also that importance of individual social capital appears to increase when the formality of the institution decreases.

Microfinance has allowed credit to the poor beyond the traditional financial frontiers in so far as lack of collateralizable assets has been overcome by group lending in

tight-knit communities. Social cohesion giving rise to norms and sanctions to deter default has provided a form of social collateral in group lending situations (Kugler *et al* 2004). In recent years, considerable effort has been made to understand both how group lending works and the effect it may have in practice. Most studies have focused on how peer group schemes can overcome the inherent problems associated with asymmetric information in financial markets. Specifically, in a world where borrowers lack collateral, group lending has been shown to mitigate problems associated with adverse selection, moral hazard, contract enforcement, and state verification (Morduch 1999; Ghatak and Guinnane 1999). Group lending with joint liability overcomes these problems by passing the monitoring activity on to the borrowers themselves. The idea is that group members will monitor their peers and pressurize those individuals who misuse their loans to act accordingly. While this monitoring activity is costly for the borrower, it is assumed to be much less so than for the lender, since group members will typically know each other well in advance of the date of borrowing. Assuming that monitoring costs are low and social sanctions effective, Ghatak and Guinnane (1999) show that, compared with an individual liability contract, effort will be strictly higher under joint liability. The implications of these findings also agree with the results reported in the personnel economics literature, which show that team-based production can have both sorting and incentive effects and that peer pressure within a team can have a discernible impact on worker effort and individual output (Lazear 1999 as cited by Rafael Gomez and Eric Santor (2003).

Despite the strong predictions of group lending models, there is little or no direct empirical evidence to suggest that peer group members actually outperform individual borrowers. For instance, Ahlin and Townsend (2003) test a wide range of the predictions of group lending with joint liability, such as the impact of interest rates, loan size, the degree of joint liability, group homogeneity, and the level of group monitoring and social sanctions. Although much of their evidence confirms the predictions of theory, they find evidence that proxies for strong social ties, group monitoring, and group co-operation are negatively related to repayment. On the other hand Karlan (2003) shows that higher levels of social capital are positively correlated with repayment, particularly when facilitated by the appropriate environment. Wydick (1999) suggests that groups matter, in that greater levels of social cohesion (such as knowing group members prior to group formation or living in the same neighbourhood) lead to lower levels of individual default. Wenner (1995) offers similar evidence that socially cohesive groups have higher repayment rates. Feigenberg *et al* (2010) provided experimental evidence on the economic returns to social

interaction in the context of microfinance. Random variations in the frequency of mandatory meetings across first-time borrower groups were used to generate exogenous and persistent changes in clients' social ties. The results indicated that group lending is successful in achieving low rates of default without collateral not only because it harnesses existing social capital, as has been emphasized in the literature, but also because it builds new social capital among participants.

2.4.2 Social Capital and Entrepreneurship

The study of networks and their impact on economic transactions stems back to classic literatures in economics and sociology in which social and relational structure influence market processes (Veblen, 1972: Granovetter, 1985). Malecki (1997) argues that entrepreneurial environments exhibit thriving and supportive networks that provide the institutional fabric linking individual entrepreneurs to organized sources of learning and resources. The quantitative research on networks and entrepreneurship has largely concentrated on three different levels of analysis network ties between individuals, those connecting teams and groups, and those connecting firms and industries. Research indicates that there is a relationship between the structure of a network and the processes inherent in the discovery and exploitation of entrepreneurial opportunities. According to Burt (1992), individual entrepreneurs with deep ‘‘structural holes’’ in their networks – that is, an absence of contact redundancy and substitution – increase their chances of successfully identifying and exploiting entrepreneurial opportunities because they are central to and well-positioned to manipulate a structure that is more likely to produce higher levels of information. Burt (1992) argues further that network structure can help the information process by allowing individuals to evaluate those they do not know through the opinions of those they do know. Burt (2000) provides a comprehensive review of this rapidly growing research literature on networks and social capital. Shane and Cable (2002) show contrary to structural hole theory, entrepreneurs with networks high in cohesion drive financial investment decisions. Using survey and interview methods, they examined the impact of social networks, referrals, reputation, and direct ties on the likelihood of investment in early stage new ventures. Though companies looking for financing have an upper hand in making deals because they possess more information than do potential investors, investors do not remedy this informational imbalance by entering into stringent contracts. Rather, they invest in companies with whom they have social relations. Additionally, Shane and Cable (2002) found that an investor will not invest in an

entrepreneur who is unknown in the investor's network, not referred by someone the investor respects, not highly regarded among investors, or not directly connected to the investor, unless the technology of the new company is outstanding. The interconnections between investors and the connections between investors and target firms are highly influential in helping investors select target companies.

During the last two decades, a new concept of capital – Social capital – has emerged to explain entrepreneurship in the knowledge economy. The literature on social capital argues that social capital plays an important role in a knowledge-driven economy (Dosi, 1988; Hofstede, 1991; Maillat and Lecoq, 1992; Maillat, 1995, 1998; Storper 1995; Knack and Keefer, 1997; Fountain 1999) because it facilitates and promotes economic actors' acquisition of knowledge and useful information (Maskell, 2001; Landry *et al* 2003). Thus, social capital has been regarded as an important driver of entrepreneurship.

Thornton and Flynn (2003) argued that social capital impacts entrepreneurship at different level of analysis; network ties between individuals; those connecting firms and industries. They conclude that social networks make an important contribution to entrepreneurship considering that networks with cohesion in which trust is fostered are contexts in which information flows easily, characteristics that are central to reducing the risk of investment in innovation. Whether networks connect individuals, groups or firms to one another, or tie together actors from two or more of these categories, they are contexts that provide the social, financial and human capital that fosters entrepreneurship. The social capital perspective presumes that networks ties provide individuals or organizations with access to knowledge and other useful resources (Napahiet and Ghoshal 1998; Davidsson and Honig, 2003; Elfring and Hulsink, 2003; Lechner and Dowling 2003; Batjargal, 2007). Thus, social capital captures the networking between individuals and organizations as well as the useful resources which can be drawn from these networks (Hassels, 2008). In addition, networks not only affect the entrepreneurial process, they also create new opportunities by internalizing other actors' skills (Kogut, 1988; Hamel, 1991).

The literature reviewed thus, shows that entrepreneurs recognize that social network principles can be practical and accessible solutions to start new firms or expand existing businesses (Kim and Aldrich, 2005). Because of the importance of these social networks, many individuals and organizations seeking to take advantage of entrepreneurial opportunities develop social networks with other actors in the knowledge economy. In short, social capital can contribute to entrepreneurship because a high level of social

capital can reduce transaction costs between actors, search and information costs, bargaining costs and decision costs (Maskel, 2001; Landry *et al* 2002).

2.4.3 Social capital and profitability of traders

One of the measures of small and medium enterprise (SME) performance is profitability. Profits are necessary for survival in the long-run in a competitive environment. Long –term profitability derives from the relations between cost and revenue: it is necessary but not sufficient condition for growth. Social capital is defined in the literature as an asset that is engendered via social relations and can be employed to facilitate action and enlarge one's profit (Griffith and Harvey, 2004). Traders require resources such as information, capital, skills, and labour to start business activities. They can complement their resources by accessing their contacts. Business social networks, however, do not constitute the resources themselves but rather represent the ability of the traders to mobilize these resources on demand. (Portes, 1995). Kushnirovich, (2010) studied social capital and its influence on the financing and profitability of small-scale enterprises (Israel Experience). The study revealed that business social capital in terms of business cooperation significantly influences financial funding and profitability of businesses.

Gomez and Santor, (2001) examined the effect of social capital and neighbourhood characteristics on the earnings of microfinance borrowers. They posited that social capital –social relations that facilitate individual action – is essential for micro entrepreneurial success. They empirically demonstrated that social capital, as proxied by membership in civil society, contributes positively to the self – employment earnings of microfinance borrowers. Their results established a microeconomic foundation for the effect of social capital on improved economic performance which according to them is something that until recently had been neglected in much of the mainstream social capital literature. Fafchamps and Minten, (2000) using data on agricultural traders in Madagascar in their study on Returns to Social Network Capital among traders reveals the strong positive effect that social capital has on the performance of agricultural traders. The study shows that social network capital has a large effect on traders' profitability. According to them better connected traders have significantly larger sales and value added than less connected traders after controlling for physical and human inputs as well as for entrepreneur characteristics. The strength and robustness of social capital variables stands in sharp contrast with the less robust and partly counterintuitive results obtained with

human capital variables such as years of schooling, years of experience as a trader, and the ability to speak more than one language. Although this does not imply that human capital is unimportant, it suggests that social capital might be as important if not more for efficiency in economies characterized by high transaction costs and poor market institutions (Fafchamps and Minten (1999).

Awoyemi and Ogunyinka (2010) examined the returns to social capital among timber marketers in Ondo state, Nigeria. Their results revealed that marketers with high income from the business tend to be more involved in local association activity as a result of social capital accumulated. They opined that social capital has great impact on the income and welfare of the poor by improving the outcome of activities that affect them. Drawing on the social embeddedness perspective, Bartjargal, 2003 examined the impact of entrepreneurs' social capital on their firm performance in post-Soviet Russia. Based on face-to-face interviews with 75 Russian entrepreneurs in 1995 and follow-up interviews in 1999, he examined effects of structural embeddedness, relational embeddedness and resource embeddedness on firm performance. The main finding is that relational embeddedness and resource embeddedness have direct positive impacts on firm performance, whereas structural embeddedness has no direct impacts on performance.

2.4.4 Microcredit and Empowerment of Traders

The micro and small business entrepreneurs in Nigeria rely heavily on the informal financial market for funding. This condition provides a platform for informal institutions to attempt to fill the gap usually based on informal social networks. In many countries, people have relied on the mutually supportive and benefit-sharing nature of the social networking of these sectors for the fulfillment of economic, social and cultural needs and the improvement of quality of life (Portes, 1998). In order to enhance the flow of financial services to micro, small and medium enterprises in the country, the Federal Government of Nigeria (FGN) launched the new Microfinance Policy, Regulatory and Supervisory Framework (MPRSF) in December, 2005. The MPRSF aimed among other things to bring the existing informal institutions under supervisory purview of the Central Bank of Nigeria (CBN). By doing this, monetary stability in the country is enhanced and financial infrastructure of the country is expanded to meet the financial requirements of the Micro, Small and Medium Enterprises (MSMEs) in the country (CBN, 2005). The policy is also meant to address the problem of lack of access to credit by small business operators.

Ogunrinola and Alege (2008) carried out a study to ascertain the impact of a UNDP- sponsored microcredit programme in Nigeria on microenterprise development. They found variables such as pre-loan training and entrepreneur level of education impact significantly on microenterprise development. Bekele and Zekele (2008) also investigated long term survival of microenterprise finance by microfinance institution, they concluded that enterprise that did not participate in such schemes regularly are 3.25 times more likely to fail in comparison with businesses that participated regularly. The methodology employed in these two papers mentioned above, however, does not help understand if and how microfinance contributed to credit market development. Lack of access to finance is one of the main constraints to the growth and expansion of small businesses. According to Timmons and Spinelli (2004) the most serious causes of bankruptcy in small enterprises could be condensed into three categories: lack of vital business skills or knowledge, lack of access to finance, and an unfavourable economic climate. Savings and credit facilities have the potential for improving the incidence of survival among small enterprises. A review of the literature reveals that the provision of financial services is an important tool for mobilizing resources for more productive use (Watson and Everett, 1999). The extent to which financial services are made available for small enterprises is measures of the degree to which small firms can save and accumulate own capital for further investment at firm level (Hossain, 1988). Although small enterprises can assist in the effort to overcome unemployment, widespread poverty and income gaps that keep widening, the majority of small firms only have a limited access to services rendered by the commercial banks (Braverman and Guasch, 1986).

Review of the literature on credit markets shows that small enterprises do not have the same financial opportunities as large-scale enterprises. Credit constraint is experienced by small-scale enterprises due to the reluctance of banks to lend money to small enterprises, the wrong assumption that the risk associated with lending money to small enterprises is high, the presence of asymmetric information and the resulting adverse selection and moral hazard, the low expected return from small amounts of loans provided to small businesses and enterprises, the inability of small enterprises to provide precise information about themselves, and their inability to raise adequate collateral for their loans are the issues of concern (Stigilitz and Weiss, 1981;Webster, 1991; Scholtens, 1999; Rosemary, 2001; Kavanamur, 2002).

2.4.5 Factors Affecting Demand for Credit among Traders

Literature on the demand for financial services in developing countries is characterized by the issue of credit rationing in the formal financial market (Kochar 1997, Atieno 1997). An important insight of these studies is that credit rationing is not the only determinant of the demand for formal vs. informal credit, but that there are distinct explanatory factors at work. Barslund and Tarp (2008) find countervailing impacts of education, number of dependants, assets, credit history, and secure land rights on the demand for formal and informal loans, but most of the mentioned variables (except for assets) have a statistically significant effect only on either formal or informal credit demand. Other variables, such as connections to credit institutions, exhibit a positive significant impact on the demand for both formal and informal loans.

Other authors identify seasonal fluctuations in income (Pitt and Khandker 2002), gender and education level of the household head, training, prevalence of an outstanding loan (Jabbar et al. 2002), family size, primary economic activity of the household head, interest rate, price of output, and area of operational holdings (Swain 2007) as additional determinants of the demand for formal credit. Zeller and Sharma (2002) pointed out that borrowing during adverse times is an integral part of the livelihood system of households in developing countries. This indicates that the experiencing of shocks should have an effect on the demand for loans, which is confirmed by Nguyen *et al* (2002). They found that many borrowers in Burkina Faso do not take loans to start a new economic activity, but rather to supplement inadequate operating capital for their already running business or to restart an activity after a break which could have resulted from a shock.

The factors affecting the demand for financial services can be categorized into two: the individual/household characteristics and the attributes of the financial institutions (Mpuga, 2004). Among the individual/household characteristics, we have the level of income, sex, age, education and whether one has obtained credit before or not. Among the attributes of the financial institutions that may affect a household's decision to demand financial services from that source is the interest rate, other terms of the credit, and distance from the provider. Other factors include: information asymmetry, high interest rate, collateral.

Mpuga (2004 and 2008) studied demand for credit among the rural households in Uganda. Using the household surveys data for 1992/93 and 1999/2000, the study concerns itself with an analysis of the demand for credit by rural agricultural producers in Uganda. Both qualitative and quantitative methods of analysis were used. The determinants of

demand for credit estimate using the probit, tobit and multinomial logit models showed that demand for credit is strongly influenced by location, age, the level of education, the value of household assets owned and other dwelling characteristics. The study recommended policies that aim at increasing household incomes so as to promote demand for credit.

Information deficits undermine the access of marginalized groups to credit (Kanbur and Squire, 2001). It appears that this information deficiency contributes to resource misallocation in the sense that potential borrowers with profitable investments are excluded due to lack of information. The effects of relationships between a lending institution and a potential borrower has been examined by Chravatti and Scott (1999), Ferri and Simon (2002) and Chrakrovati and Yilmazer (2004) when shedding light on agency loss. The idea is that the closer the relationship in some senses, the greater the information both parties have about each other and the lower the risk experienced by the lender.

In another study, Okurut *et al* (2004) investigated the household and individual characteristics that act as determinants of both the demand and the supply of formal and informal credit in Uganda. Okurut *et al* (2004) survey observed that most of household level datasets in the country do not contain enough information to model both sides of the credit market, and researchers were constrained by information about the institutions that provided the credit and the conditions under which such credit was granted or refused. The study employed a multinomial logit to estimate the determinants of the selection into borrowing from banks or from informal lenders rather than not borrowing at all, not at all was used as a base category (the reference value). However, it is notable that very few variables – apart from the regional and urban dummies – significantly distinguish a choice for bank rather than informal or no credit, and these are the same variables determining the choice for informal loans. In the cases of age, gender, education, the dependency ratio and household expenditure, the coefficients are larger for banking credit, i.e. these factors make it more likely that people will demand credit, particularly bank credit. Significantly, bank credit is associated with an urban location but not with any region, whereas urban location plays no significant role in the choice for informal credit, but region does.

Pham and Lensink (2007) compared lending policies of formal, informal and semiformal lenders with respect to household lending in Vietnam. Multinomial logit model was used to examine the determinants of the probability of the use of formal, informal or semiformal credit. The model is used to examine unordered choice sets when

data are individual specific. The data are drawn from a household survey, which is conducted using the method of stratified random cluster sampling; taking into account the differences between the specific design and simple random sampling and produce the correct standard errors. Dataset, stratifications and primary sampling units (PSU) were derived from information on the province and the commune where the household resides. A drop of 111 observations confined to the group of unclassifiable sources of credit and of 442 observations due to missing values on various contract terms results in a sample of 3,781 loans for this regression. The results of the estimates when the informal credit serves as the reference group show that households with collateral or households that are supported by a guarantor are more likely to use formal and/or semiformal credit. The analysis suggests that the probability of using formal or semiformal credit increases if borrowers provide collateral, a guarantor and/or borrow for business-related activities. The probability of using informal credit increases for female borrowers. It also appears that the probability of using formal credit increases in household welfare up to a certain threshold, but at a decreasing rate.

Okurut (2006) specifically investigated the factors that influenced access by the poor and blacks to credit in the segmented financial sector in South Africa, using income and expenditure survey data from 1995 and 2000. The study sheds light on the extent of financial sector deepening through household participation especially among the poor and blacks, in the context of the fight against poverty. Three types of credit were identified by the study. Formal credit (include debts from commercial banks), semi-formal credit included consumption credit (for household assets such as furniture and open accounts in retail stores), and Informal credit specifically referred to credit from relatives and friends. Multinomial logit models and heckman probit models with sample selection were used for analytical work. The results suggest that the poor and blacks have limited access to the formal and semi-formal financial sectors. At the national level, access to bank credit is positively and significantly influenced by age, being male, household size, education level, and household per capita expenditure. Being poor have a negative and significant effect on formal credit access. Semi-formal credit access is positively and significantly influenced by household size, per capita expenditure, provincial location and being coloured. The negative and significant factors in determining access to semi-formal credit include being male, rural location, being poor and being white. Informal credit access is negatively and significantly influenced by education level and race. Among the poor, access to bank credit is positively and significantly influenced by being male, provincial location and

being coloured. Access to semi-formal credit is positively and significantly determined by household per capita expenditure, provincial location and being Indian. Access to informal credit by the poor is positively and significantly influenced by provincial location. Within the black population, access to bank credit is positively and significantly influenced by age, being male, household per capita expenditure and education level. Semi-formal credit access by blacks is positively and significantly influenced by household size, household per capita expenditure, education level and provincial location. However being male, poor and located in a rural area negatively affected access to semi-formal credit by blacks. Informal credit access by blacks is negatively influenced by education level, but positively influenced by being located in the western and Eastern Cape. These findings confirm that improving access to organized credit markets (for example: formal and semi-formal credit markets) by the poor and blacks remains important in the fight against poverty. Credit markets are an essential economic institution. In developing countries, particularly in countries undergoing rapid social and economic transition, it is important to identify emerging credit demand and institute credit supply in a timely manner to facilitate economic transformation.

Tang *et al* (2010) focused on the evolving rural credit market in China, where borrowing from the social network has been common but the recent economic transition has made this informal credit market inadequate in addressing rural credit needs. Using data from a household survey, they estimated both binary choice probit models and a multinomial probit model to explore the determinants of credit market choice and credit constraints. They found that the credit demand is significantly affected by household's production capacity as supported by the fact that household size, land size, head's education all significantly increase household's probability to borrow, but the impact of these factors varies considerably by credit market. Transaction costs have a significant, negative effect on formal credit demand. The credit constraints analysis suggest that off-farm employment, land size and the cost of the credit are the three most important factors that increase the probability of being constrained.

Using a probit model to study the determinants of demand for credit, Dutta and Magabich (2004) reported that individual characteristics, household characteristics, repayment ability variables that reflect the individual's ability to secure a loan and other factors affecting the individuals' decision such as having social events and responsibilities, religious beliefs, application cost, availability of lender in local areas and availability of a mediator affected farmers' demand for credit. The result of that study revealed that male

individuals were less likely to apply for credit than female individuals. This may reflect the male's ability for self-financing or the ability to access other credit markets or lack of demand for micro credit. Being single and having a tendency for being financially independent from family, being the head of household, having enough knowledge about sources of credit, availability of microfinance providers and having effective loans schemes were reported to increase the probability of applying for loans.

The negative experiences faced by farmers and entrepreneurs in the formal financial market have brought about a renewed interest in the operations of the informal financial market and its place in the mobilisation and allocation of funds (Srinivas, 1991). Favorable comments on the workings of indigenous savings and credit groups as autonomous (self-help) institutions, have brought home the fact that the informal sector is made up of several other actors and modalities of financial intermediation, than those of money lenders, traders, and landlords (Bourma, 1979). Thus, while there can be little doubt of the formal sectors' superiority over the informal sector, when it comes to financing large scale economic development and projects of national and regional importance, the role and the strength of informal finance agents in small-scale economies and their subsequent importance to low income households should not be under-estimated (Srinivas, 1993).

2.4.6 Access to Credit and Credit Rationing

Credit is used to finance investment by solving a liquidity problem which arises from the expected capital outlay. Investment in turn is aimed at a higher-level goal such as profit or income. In literature, access to credit and participation in credit program are used interchangeably. Some authors think that a distinction must be made between the two (Zeller, 1994). Diagne and Zeller (2001) confirmed that access to credit is often confused with participation in credit programs and that it has been used interchangeably in many studies. They went further to make distinction among access to credit, participation in credit programs and being credit constrained. They posited that a household is said to have access to a particular source of credit if it is able to borrow from that source, although for a variety of reasons it may choose not to. They measured the extent of access to credit by the maximum amount a household can borrow (its credit limit). If this amount is positive, the household is said to have access. A household is said to be participating if it is borrowing from a source of credit. A household is credit constrained when it lacks access to credit or cannot borrow as much as it wants.

Participation could be defined as the effective access to credit program. Diagne (1999) used the concept of credit limit to identify determinants of access to and participation of households in informal and formal credit market in Malawi. His results show that (1) there exists severe credit constraint in Malawi, (2) the composition of household assets is much more important as a determinant of household access to formal credit than the total value of household assets or landholding size. However, landholding size remains a significant determinant of access to informal credit. (3) The unobserved program-specific attributes captured by the program dummy variables are the most significant factors that influence household decisions to participate in a credit program. These unobserved program-specific attributes include the types of loans provided and restriction on their use. There are also other educational and social services provided by the programs. Access to credit facilitates the marketing operation, boosts and empowers traders, particularly the small scale ones who Ariyo *et al* (2001) observed have less access to diverse sources of capital, notably institutional or formal loans from the government, banks and private companies, to expand their businesses.

By using a micro-econometric analysis of household surveys, Duong and Izumida (2002) examined the rural household participation in the Vietnamese rural credit market. The empirical results showed that due to segmentation of rural credit market in Vietnam, households are rational in deciding the sources from which they should ask for particular kinds of loans. It was found that, total farming area and total value of livestock are decisively the determinants of borrowing by households from the formal financial institutions.

Nguyen (2007) applied probit model to estimate credit program participation and Tobit model to estimate loan amount received. By separating the source of loan, he expects that the determinants of credit participation will be different as the eligible requirements for borrowing by household are different between sources. He specifies credit program participation or the loan size as a function of household characteristics including gender of household head, age of household head, number of household members, educational level of household head, agricultural work, value of house and landholding size and of commune characteristics including distance from commune to the nearest government banks. He found out that number of members in a household is found to have a large and significant effect on credit participation, especially from formal source and that household is more likely to borrow if head of household is working in agriculture or self-business.

Credit rationing has been understood as a situation where a lack of sufficient credit inhibits desirable investment, since the liquidity problem cannot be solved. Several definitions of credit rationing have emerged from literature. However, there is the need to provide a common reference point or definition for discussion in this study. This is done by an examination of the various definitions of the term and a conclusion of the line of thought adopted. Petrick (2002) provided a summary of the methods for measuring and analysing credit rationing. He distinguished six approaches that have been used in literature to investigate empirical measurement of credit rationing. These approaches are stated below:

- direct method based on measurement of loan transaction costs;
- direct method based on qualitative information collected in interviews,
- direct method based on the credit limit concept;
- direct method based on spill – over effects;
- indirect method based on econometric household modeling;
- indirect method based on an econometric analysis of dynamic investment decisions.

Direct measurement of loan transaction costs: This method collects information about additional, loan specific transaction costs borrowers face apart from nominal interest rates, such as costs of information collection, loan application, insurance of collateral etc. These transaction costs may well make investment unprofitable and thus lead to exclusion of borrowers who might have been in a position to repay only nominal interest rates. The explicit reason for credit rationing in this approach is that the price a borrower faces is effectively too high for him to pay. Literature (Adams 1993; Cuevas and Graham 1986; Ladman 1984; and Meyer and Cuevas 1992) has shown that loan transaction costs are the ultimate reason for credit rationing of certain types of borrowers, particularly small farms. This understanding of credit rationing hence departs from the definition of rationing as previously defined since the restriction works through the price variable. This method has been criticized for its theoretical inconsistency and conceptual difficulty. It was argued that it is impossible to measure the precise costs of transaction as long as the correct opportunity costs of transaction activities are unknown (Schneider, 1987; Terberger, 1994).

Direct method based on qualitative information collected in interviews: In this approach, borrowers are asked whether their demand for credit is met and if they would

like to borrow more at the prevailing interest rate. This method was first applied by Feder *et al* (1989) and they provided empirical evidence that this indicator is a reliable measure of liquidity shortages in their sample of 600 Chinese farm households, where liquidity was defined as the sum of savings, cash, and fungible credit. The paper was aimed at supporting policy formulation that stimulates production. However, Jappelli (1990) adopted the approach to analyse the characteristics of credit constrained households. He estimated a logit equation with the probability of being credit constrained as dependent variable and found that income, wealth and age were the most important determinants of being credit constrained. This approach of directly asking respondents about their credit rationing status was further refined by Baydas *et al* (1994) and Zeller (1994). Baydas et al. (1994) analysed a sample of micro-entrepreneurs in Ecuador, in which they further divided the group of constrained borrowers as those who are (a) completely rejected, i.e. who applied for a loan without success, or (b) unsatisfied, i.e. who applied but obtained a smaller loan than demanded. Together with the (c) satisfied or unconstrained borrowers who obtained as much as applied for and the (d) non-applicants, Baydas *et al* (1994) identified four groups of respondents. Based on this distinction, they used a multinomial logit model to quantify determinants and probabilities for respondents to be in one of the four distinct groups. Zeller (1994) employed a similar approach of four categories and adopted a two-stage Probit model to analyse formal and informal borrowing in Madagascar. Barham *et al* (1996) used principally the same categorisation to investigate the ability of Guatemalan credit unions to relax credit constraints of small-scale producers. However, they condensed satisfied or unconstrained borrowers and non-applicants into one group of unconstrained borrowers.

Direct method based on quantitative information collected in interviews by using the credit limit concept: In an attempt to overcome the shortcomings of qualitative indicators, researchers at the International Food Policy Research Institute (IFPRI) developed the credit limit concept as a novel approach to measure credit rationing (Diagne, 1999; Diagne *et al* 2000). The idea is to ask a given respondent about the maximum amount a lender is willing to lend him, which is the credit limit of the respondent with regard to this lender. The credit limit thus measures the borrower's current access to credit, which may be different for different loan sources. However, a given credit limit does not necessarily imply a binding credit constraint. A borrower is credit constrained if the optimal amount borrowed when borrowing under a credit constraint is strictly less than the optimal amount that would be borrowed if the credit

constraint did not exist. In other words, the borrower is credit constrained only if his optimal loan size is effectively restricted by his credit limit. The researchers further made distinction between access to credit and participation in credit markets. Households may choose not to participate in credit markets, although they have access to credit (positive credit limit). This approach makes possible a metric quantification of the extent of credit rationing and therefore allows the application of a more sophisticated method of analysis. The limitation of the approach is that some respondents may be ignorant about their credit limit and it is also not a consistent measure of credit market efficiency since no comparison with an equilibrium first-best alternative is provided.

Direct method based on spill-over effects with regard to secondary sources: The major assumption of this method is that other secondary credit sources rather than bank credit are more expensive than bank loans. If a borrower makes use of these secondary sources, he is assumed to be unable to satisfy his financial needs from the primary source, though he has sufficient repayment capacity to serve the secondary source. He can therefore be treated as credit rationed with regard to the primary source. Use of the secondary source due to unsatisfied demand with regard to the primary source is sometimes called 'spill-over' (Bell, 1993). Two examples of this method are the trade credit in developed countries and informal credit (moneylender) in developing countries. Both are regarded as comparatively more expensive than formal bank loans, although lenders in these secondary segments usually are in a more advantageous position with regard to information asymmetries as compared with banks. Bell *et al* (1997) estimated demand and supply functions under relatively restrictive assumptions of an unobserved regime switching model for segmented credit markets in rural Punjab. Their analysis based on a cross sectional sample of farmers shows that the formal market is responsible for most rationing, demand is rather inelastic with regard to interest rates, and tying credit to output marketing made informal lenders willing to advance much bigger loans. This method requires detailed information (panel data) on various loan sources used by respondents for a thorough analysis. It is good in a situation where there are segmented credit markets. However, the assumption of the use of secondary sources or spillover effect may imply an under-estimation of credit rationing if some rationed households do not turn to the secondary source of credit, but simply accept the constraints on the formal market. This method or approach is not applicable in the study under investigation.

Econometric analysis in the framework of a static, micro-economic household model (Indirect method): This method analyses the effects of credit rationing under implicit or

explicit consideration of a farm household model and hence can take advantage of its theoretical results. It is assumed that market imperfections such as credit rationing lead to important interactions between the production and consumption sphere of the household. Observable consequences of these interactions are taken as a starting point for the econometric analysis of rationing phenomena in this approach. In the credit market situation, the presence of credit rationing is hence defined by its consequences for allocation decisions within the farm household. This method assumes that the credit market is understood to be efficient if the first-order condition for optimal credit allocation is met, that is values of marginal productivity equal exogenous interest rates (Carter and Wiebe, 1990; Sial and Carter, 1996). This method has produced different results across countries. Carter (1989) finds that credit had even a negative effect on farm output in his Nicaraguan sample, Carter and Wiebe (1990); Sial and Carter (1996) reported shadow prices of up to 78 and 300 percent net of repayment in Pakistan and Kenya, respectively. A notable result is that of Feder *et al* (1990) who found that the marginal product of credit is low although demographic characteristics of the household have significant influence on production decisions. They conclude that farms are in fact credit rationed but funds are diverted away to non-productive activities or used to finance long-term investment. This approach yields a theoretically consistent definition of credit rationing and a straight-forward interpretation of credit market efficiency. Econometric modelling offers a wide range of quantitative analysis including causal inference. The quantitative nature of results enhances comparability and interpretation. The method has been criticized for the non-experimental nature of the data as well as exact specification of the functional forms and choice of regressors. It, however, offers a promising way to combine theoretical reasoning with quantitative analysis, while the data demands remain manageable.

Econometric analysis of dynamic investment decisions (Indirect method): This method attempts to track down credit rationing by empirically detecting violations of implications of a theoretical decision making model. Thus, it has an explicit theoretical foundation in which credit rationing is interpreted. The literature related to this approach can be grouped into a more traditional and a more recent approach. The theoretical foundation of the more traditional studies is often rather pragmatic and generally does not allow for uncertainty in the decision model. In contrast, more recent models explicitly base their research on stochastic investment models, which was probably made simple by the development of corresponding econometric tools for time series and panel data analysis. This approach simply adds a liquidity or financial variable to the existing

investment function comprising output or capital as explanatory variables or explains investment by a liquidity variable alone. Feder *et al* (1992) employed cross sectional data in their study and found a significant effect of credit on crop-related capital and housing investment in at least some of the investigated Chinese provinces. Petrick (2002) investigated the effect of long term credit access on farm investment in Poland and found that this variable has a highly significant influence on investment decisions. In these studies, liquidity variables hence turned out to have a significant influence on investment, which is evidence of occurrence of credit rationing. In recent time, the use of dynamic programming or the Lagrange method has been adopted to solve stochastic optimization problem. A major disadvantage of the method is its enormous data requirements, and in the absence of sufficiently large panel data it might not yield satisfying results.

One common difference between the direct and indirect methods is the fact that the indirect methods analyse the consequences of credit rationing by means of household framework and econometric modelling as opposed to the use of qualitative analysis under direct approach. The use of household framework has the major advantage of yielding a theoretically consistent definition of credit rationing and a straightforward interpretation of credit market efficiency. Also, econometric approach is methodologically ambitious and offers a wide range of quantitative analysis which enhances comparability, interpretation and causal inference.

2.4.7 Lessons Learnt from Literature

In unpacking the literature on social capital, access to microcredit and profitability, some interesting information was unearthed. Through social networks individuals can access useful information and make decisions in response to a given set of alternatives based on acquired information and (formal and /or tacit) knowledge. An individual's social relationships constitute an advantage in his economic activity because information that he holds about members of his social capital reduces the moral hazard in trades made with them. Also, networks with cohesion in which trust is fostered are contexts in which information flows easily. In the absence of formal institutions to support market- based exchange, it has been learnt that closely-knit and multi-stranded social networks generate a social capital of norms, information and sanctions that provide an alternative framework within which exchange can develop.

Literatures suggest that the use of existing ties improves accessibility to credit. Study by Grootaert (1999) in Indonesia reveals that households with higher social capital

are better able to obtain credit and that members of financial associations are more likely to obtain credit than non-members and obtained higher credit amount as well. In the same vein, Grootaert (2001) reported that membership and active participation in other local associations whose prime objective is not financial also contribute to credit access. This is perhaps the sense in which social capital is truly "social" in that the building of trust and network among members in the context of a social setting spills over into financial benefits. This interpretation of social capital has been proposed by several authors such as Putnam (1993); Dasgupta (1988); and Fukuyama (1995). In Nigeria, the important role of social networks or relations and personal interaction amongst grain traders has not been fully explored as relate to access to credit by lowering its costs; improving profitability by increasing information flows and reduction in transaction cost. This study will employ multinomial logit to determine factors affecting accessibility to credit, because it provides a good approximation and a computational advantage and also the problems of heteroscedasticity which often present in cross sectional data are avoided when compared to the Probit or Tobit model used by other studies.

Literature shows that entrepreneurs recognize that social network principles can be practical and accessible solutions to start new firms or expand existing businesses (Kim and Aldrich, 2005). Thus social capital is essential for entrepreneurship because a high level of social capital can reduce transaction costs between actors, search and information costs, bargaining costs and decision costs. Social capital has a large effect on traders' profitability. Better- connected traders have significant larger sales and value added than less connected traders after controlling for physical and human inputs as well as for entrepreneur characteristics (Fafchamps and Minten, 1998).

CHAPTER THREE

METHODOLOGY

This chapter describes the study area, methods of data collection, and the methods employed in analyzing the collected data so as to achieve the objectives of the study.

3.1 Area of Study

The study was conducted in southwestern part of Nigeria. The southwestern geopolitical zone of Nigeria covers between latitude 6^0 to the North and 4^0 to the South. It is marked by longitude 4^0 to the West and 6^0 to the East and has a land area of about 114,271 square kilometers representing 12% of the country's land mass. The total population is 27,581,992 and more than 96 percent of the population is Yoruba (NPC, 2006), South-West zone comprises of six states (Oyo, Osun, Ogun, Ondo, Ekiti and Lagos). It is bounded in the north by Kogi and Kwara states, in the east by Edo and Delta states, in the south by the Atlantic ocean and in the west by the Republic of Benin. Figure 1 shows the map of southwest States, Nigeria.

The zone exhibits the typical climate of averagely high temperature and high relative humidity with two distinct seasons namely; the rainy season which lasts from March/April to October/November and the dry season which lasts from October/November till March/April.

Agriculture constitute the main occupation of the people with notable food crops including cassava, maize, cowpea, rice, sorghum, millet, yam and banana and cash crops like cocoa, oil palm, rubber, coffee, kolanut, while a good number of the people engage in trading on various agricultural produce, either on retail or wholesale basis. Some of the people engage in non-farm economic activities, like craft making, carpentry, bricklaying and civil service.

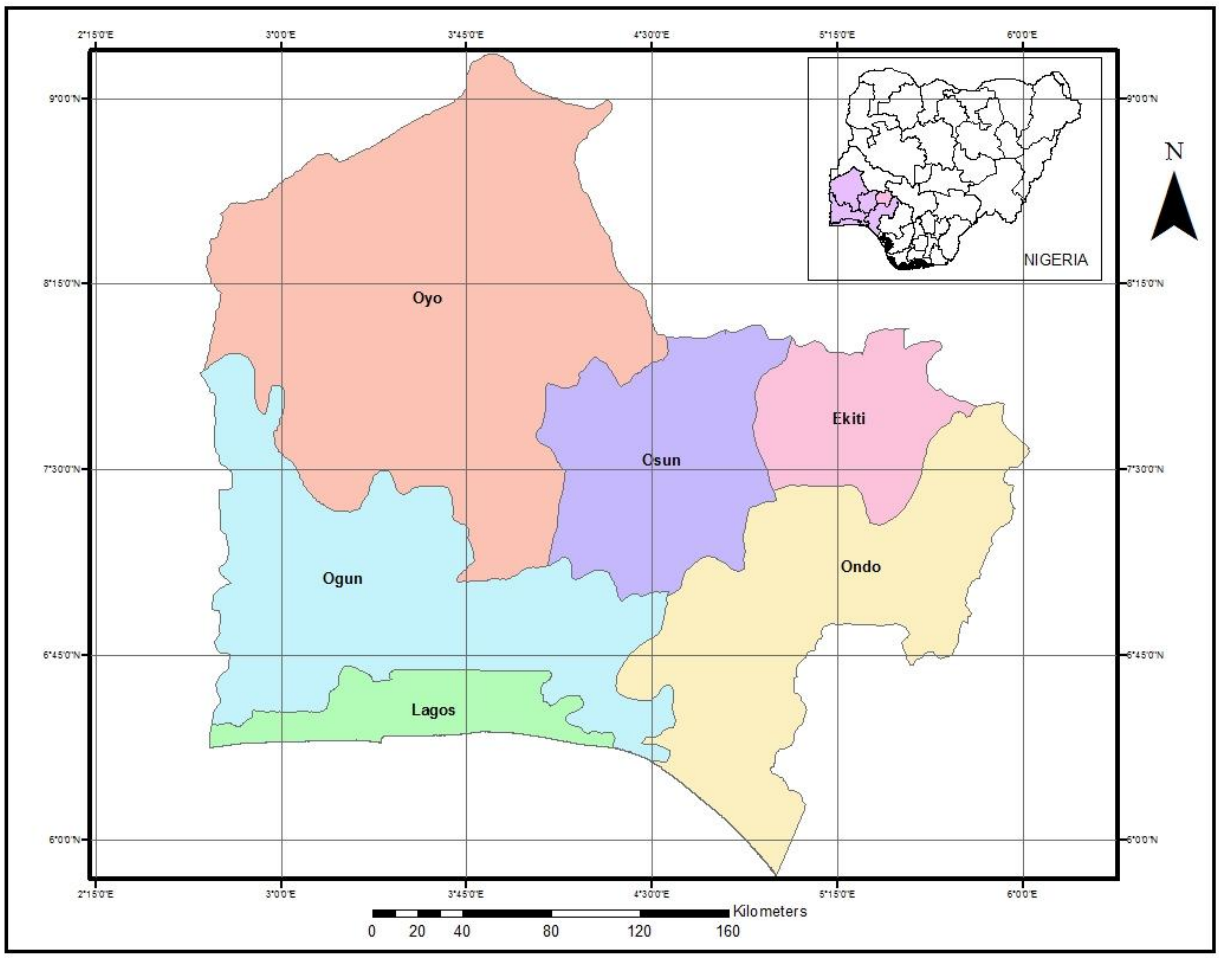

Fig.3.1: Map of Southwestern States of Nigeria

3.2 Sources of Data

Primary data were collected from grain traders with the aid of well structured questionnaire. Some of the data include socio-economic and demographic characteristic, membership of association, participation in the local level institution activities and sources of microcredit. Information was sought on whether the grain traders have benefited from microcredit program or not and amount/volume of credit received. In addition, information were collected on credit characteristics, volumes of trade, social capital variables, gross revenue of the traders, costs of grain sold, and total variable costs. The questionnaire is as shown in appendix 1.

3.3 Sampling Procedure

A multistage sampling technique was employed for this study. Oyo and Ogun States were randomly selected from the six states in southwestern Nigeria. In the second stage, twelve and eleven Local Government Areas (LGAs) (rural and urban) respectively were randomly selected from these states using the probability proportionate to size of these LGAs. This is because grains are bought from farmers at rural markets and resold to consumers at both rural and urban markets.

The proportionality factor used in the selection of LGAs is stated as:

$Xi = n/N*23$ …….....… (3.1)

Where Xi= number of LGAs to be sampled from a state

n = number of LGAs in the particular state

N = total number of LGAs in two states

The desired total number of LGAs for the two states is 23

At the next stage, there was a random selection of eleven rural and twelve urban markets in the selected local governments based on availability of grain markets. The last stage of the sampling involved the random selection of grain traders in the selected rural and urban markets. The number of grain traders chosen is a function of the number of grain traders available in a particular market. However, a total of five hundred grain traders were interviewed while only four hundred and ninety two completely filled the questionnaires that were used for analysis. Table 2 and Figure 3.2 show the sampling procedure and the map of the two states.

Table 2: Sampling Procedure for the Selection of Grain Traders

State	LGA	Type of Market	Name of Market	No of questionnaire distributed	No of questionnaire retrieved
Oyo	Akinyele	Rural	Ijaye	11	11
	Atiba	Urban	Akeesan	36	35
	Egbeda	Rural	Egbeda	11	11
	Ibadan S/E	Urban	Oritamerin	46	45
	Ibadan North	Urban	Bodija	89	88
	Ido	Rural	Omi Adio	15	15
	Ogbomoso North	Urban	Sabo	24	24
	Ogbomoso South	Urban	Akande	21	21
	Orire	Rural	Iluju	7	7
	Saki East	Urban	Obada	13	13
	Saki West	Urban	Sango	19	19
	Ogo oluwa	Rural	Odo oba	10	10
Ogun	Abeokuta North	Urban	Lafenwa	42	41
	Ado odo	Urban	Ado odo	13	13
	Ewekoro	Rural	Obada Oko	21	20
	Ifo	Urban	Ifo	20	20
	Ijebu North	Rural	Ago Iwoye	12	11
	Ijebu N/E	Rural	Atan	12	11
	Ijebu ode	Urban	Okun Owa	25	25
	Odeda	Rural	Alagbagba	13	12
	Yewa North	Rural	Imasai	11	11
	Yewa South	Urban	Sayedero	19	19
	Ipokia	Rural	Agosasa	10	10
Total				500	492

Source: Field Survey 2011

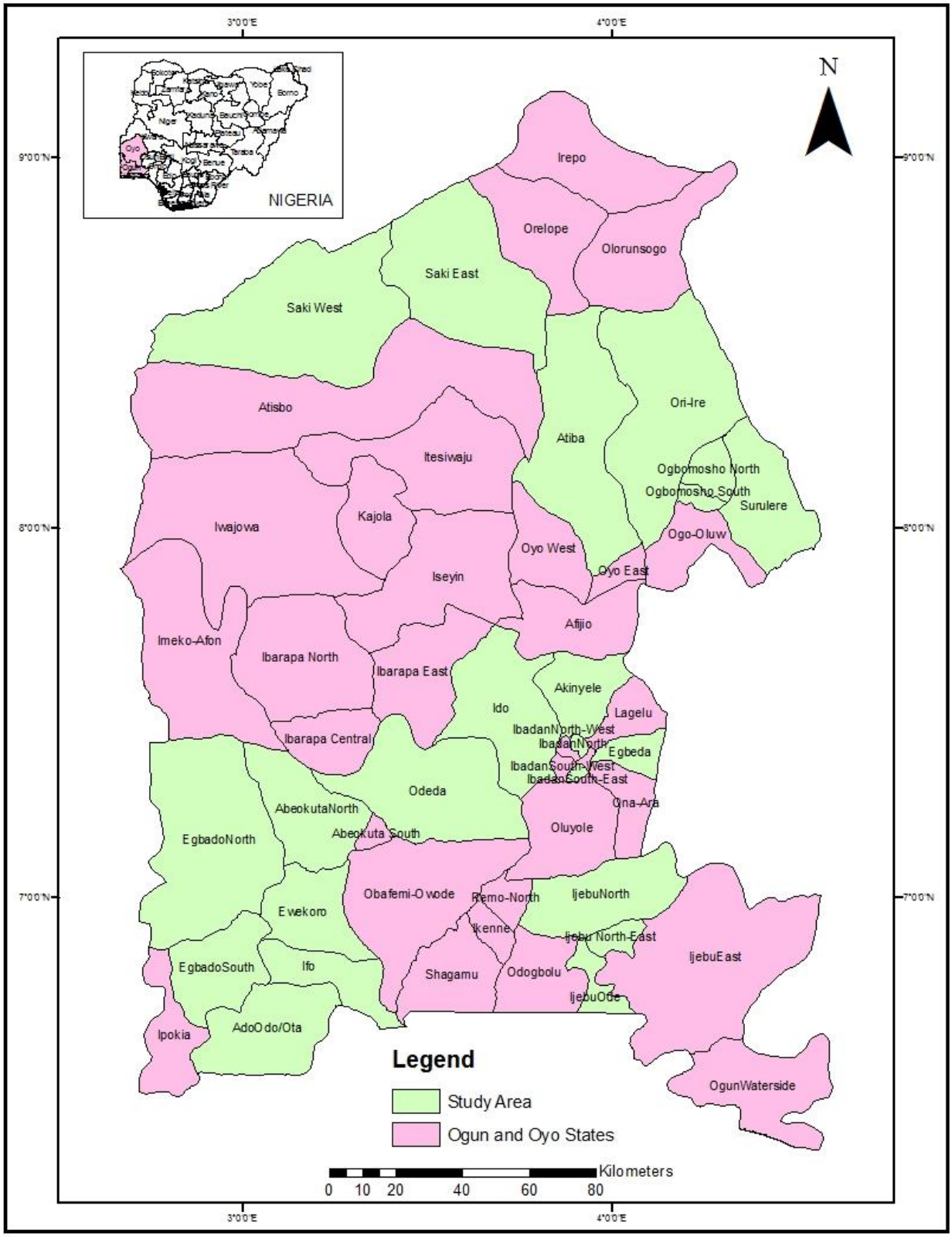

Fig.3.2: Map of Oyo and Ogun States by Local Government Areas

3.4 Methods of Data Analysis

The study employed a number of analytical tools based on the objectives of the study. The tools include:

3.4.1 Descriptive Statistics

Descriptive statistics such as tables, frequencies, mean and percentages were used for socio economic and social capital variables.

3.4.2 Multinomial Logit Model

In order to determine the factors affecting access to microcredit among grain traders, a Multinomial logit (MNL) regression was used. It was carried out to model relationships between a polytomous response variable and a set of regressor variables. According to Rodriguez (2003), the MNL model is quite applicable to this study because it is employed when individuals make choice among three or more alternatives and with each case; it is assumed that all the alternatives are mutually exclusive. The multinomial logit models estimate the effects of the explanatory variables on a dependent variable with unordered response categories. The advantage of multinomial logit is its computational ease and also it is relatively robust, as measured by goodness of fit or prediction accuracy (Mpuga, 2004 and Mpuga, 2008). The various sources of credit from which grain traders could access credit are classified as the dependent variables. It is supposed that the dependent variable D_{it} can take on one of j categories 1, 2,-----, k (different sources of microcredit). There are five distinct categories namely: traders' association, cooperative society, ROSCAS, microfinance banks and family and friends. It is assumed that all the alternative microcredit sources are mutually exclusive (Mpuga, 2004, Mpuga 2008, Balogun, 2011).

Let Pr (D_{it} = M/X) be the probability of observing outcome M given X, the probability model for D_{it} can be constructed thus:

Pr (D_{it} =M/X) =

$$\frac{\exp \beta_o + \beta_1 X_{2i} + ...\beta_k X_{mi}}{\sum_{j=1}^{k} \exp(\beta_{o\lambda} + \beta_{ij} X_{2i} + ...+ \beta_{kj} X_{ni}} \quad .... (3.2)$$

For j = 1,2,……..k. The parameters are not all identified since more than one set of parameters generates the same probabilities of the observed outcome unless we impose constraints on the model which is achieved by setting parameters, for example, those of the first choice category j = 1 to be all zero: $\beta_{oi} = \beta_{11} = \beta_{ki} = 0$. In other words, parameters of the first choice category are used as the base against which the other choices are compared. In this study, the first choice category against which other choices are compared is cooperative society. The choice can be arbitrary and this opportunity can be used to make comparison between any groups of alternatives categories. The log likelihood function for the multinomial logit can be written thus:

$$\ell = \sum_{i=1}^{n} \sum_{j=1}^{k} d_{ij} Log(P_{ij}) \qquad (3.3)$$

Where dij is a dummy variable that takes the value 1 if observation i has chosen alternative j; 0 otherwise

The first - order conditions are:

$$\frac{\delta \ell}{\delta \beta_{kj}} = \sum_{i=1}^{n} (d_{ij} - P_{ij}) X_{kj} \qquad (3.4)$$

The multinomial logit model can also be expressed and interpreted in terms of the odds, that is the odds of outcome m versus outcome n given X, indicated by (1)m/n (X), equal to n given X, indicated by (i) m/n (x), equal to

$$\omega_{m/n}(xi) = \frac{\Pr(y_i = m / x_i)}{pr(y_i = n / x_i)} = \frac{\exp(x_i \beta_m) / \sum_{j=1}^{j} \exp(x_i \beta_j)}{\exp(x_i \beta_n) / \sum_{j=1}^{j} \exp(x i \beta_j)} = \frac{\exp(x_j \beta_m)}{\exp(x_i \beta_n)} \qquad (3.5)$$

Combining the exponent leads to the odds equation

$$\omega_{m/n}(xi) = \exp[x_i(\beta_m - \beta_n)] \qquad (3.6)$$

Taking logs shows that the multinomial logit model is linear in the logit:

$$Ln\omega_{m/n}(x_j) = \exp[x_i(\beta - \beta_n)] \qquad (3.7).$$

The difference $\beta m - \beta n$, called the contrast, is the effect of x on the logit of outcome m versus outcome n. Since the model is linear in the logit, it is fairly simple to compute the partial derivative:

$$\frac{\delta \ln \omega_{m/n}(x)}{\delta x_k} = \frac{\delta x(\beta_m - \beta_n)}{\delta x_k} = \frac{\delta x \beta_m}{\delta x_k} - \frac{\delta x \beta_n}{\delta x_k} = \beta_{km} - \beta_{kn}$$

…….... (3.8)

Which allows us to interpret β_{km} - β_{kn} units thus: for a unit change in x_k, the logit of outcome m versus outcome n is expected to change by β_{km} - β_{kn} units, holding all other variables constant.

As suggested by Maitra and Ray (2000), the coefficients in this model are difficult to interpret, so the relative probability of Y = j in relation to the base category Y = 0 is given by the Relative Risk Ratio (RRR) or odds ratio. This parameter estimates measure the impact of a unit increase in the relevant explanatory variable on the log odds ratio of the particular state in relation to the baseline category i.e. cooperative society.

An odds ratio equal to 1 suggests that the explanatory variable leaves the dependent variable unchanged. If the odds ratio is greater (less) than 1, it implies that the effect of explanatory variable is to increase (reduce) the dependent variable (Long, 1997).

In this case, the choice of source of microcredit is then modeled as a function of socio-economic and demographic characteristics. This can be presented as a general form equation:

$Z_{it} = f(Xi)$ …… (3.9)

Where Z_{it} takes on values 1, 2,……., k, if individual i chooses alternative j at time t. The categorization is done because of the inherent ease of accessibility.

The MNL model is however operationalized empirically with the following equations.

$Z_{ot} = \alpha_o + \beta_{10}X_1 + \beta_{20}X_2 + \text{----------} + \beta_n X_n + \varepsilon_1$ ..... (3.10)

$Z_{1t} = \alpha_1 + \beta_{11}X_1 + \beta_{21}X_2 + \text{----------} + \beta_n X_n + \varepsilon_1$ ..... (3.11)

$Z_{2t} = \alpha_2 + \beta_{12}X_1 + \beta_{22}X_2 + \text{----------} + \beta_n X_n + \varepsilon_1$ ..... (3.12)

$Z_{3t} = \alpha_3 + \beta_{13}X_1 + \beta_{23}X_2 + \text{----------} + \beta_n X_n + \varepsilon_1$ ..... (3.13)

$Z_{4t} = \alpha_4 + \beta_{14}X_1 + \beta_{24}X_2 + \text{----------} + \beta_n X_n + \varepsilon_1$ ..... (3.14)

$Z_{5t} = \alpha_5 + \beta_{15}X_1 + \beta_{25}X_2 + \text{----------} + \beta_n X_n + \varepsilon_1$ ..... (3.15)

The dependent variable Di is traders' microcredit source. It takes on the value of 1 when a trader uses source i and zero otherwise. Thus Z_0, Z_1, Z_2, Z_3, Z_4 and Z_5= probabilities of

traders selecting different microcredit sources. (Traders association, cooperatives, ROSCAS, microfinance banks, relatives and friends).

X_i……X_n represent vector of the explanatory variables where n = 1---------18

β_1…….. β_2 represent the parameter or coefficients

ε_i represents the independent distributed error term and α_0, α_1, α_2…..shows the intercept or constant term. The explanatory variables were selected based on (Balogun, 2011, Ajani and Tijani, 2009, Mpuga, 2004).

The Explanatory Variables include:

Traders Characteristics:

X_1= Gender of the traders (D = 1 for male, otherwise D = 0)

X_2 = Age of the traders (years)

X_3 = Marital status of the traders (D = 1 if married, otherwise D = 0)

X_4 = Household size of traders

X_5 = Years of formal education of the traders (years)

X_6 = Primary occupation (D = 1 if trading, otherwise D = 0)

X_7 = Interest rate on loan (%)

X_8 =Time lag

X_9 = Distance between dwelling place and source of credit (Km)

X_{10} = Payback period

Social capital Variables:

X_{11} = Level of Trust (%)

X_{12} = Social cohesion (%)

X_{13} = Membership density of traders in association (Number)

X_{14} = Decision making index (%)

X_{15} = Cash contribution of traders to association (Naira)

X_{16} = Labour contribution of traders to association (man-day)

X_{17} = Meeting attendance index of traders in association (%)

X_{18} = Heterogeneity index of associations (%)

Table 4: *A priori* Expectation of the Exogenous Variables affecting Access to Microcredit among Grain Traders

Variables	Measurement	Expected Signs	Literature
Gender of the traders X_1	Dummy	+/-	Guiso *et al* 2004; Akinyemi *et al* 2012
Age of the traders X_2	Continuous	+	Mpuga,2008; Akinyemi *et al*,2012
Marital status of the traders X_3	Dummy	+/-	Mpuga,2008; Akinyemi *et al*,2012
Household size of traders X_4	Continuous	+/-	Guiso *et al*,2004;
Years of formal education of the traders X_5	Continuous	+	Mpuga,2008
Primary occupation X_6	Dummy	+	Guiso *et al*,2004
Interest rate on loan X_7	Continuous	+	Mpuga, 2008
Time lag X_8	Continuous	-	Guiso *et al*, 2004
Distance between dwelling place and source of credit X_9	Continuous	-	Guiso *et al*,2004
Payback periodX_{10}	Continuous	-	Mpuga. 2008
Level of Trust X_{11}	Dummy	+	
Social cohesion X_{12}	Dummy	+	
Membership density of traders in association X_{13}	Continuous	+	Guiso, *et al*, 2004, Lawal *et al*,2009; Heikkila *et al*,2009
Decision making index X_{14}	Continuous	+	Ajani and Tijani,2009; Burt,2000, Balogun,2011, Balogun and Yusuf 2011
Cash contribution of traders to association X_{15}	Continuous		
Labour contribution of traders to association X_{16}	Continuous	+	Grootaert, 1999; Ajani andTijani,2009
Meeting attendance index of traders in association X_{17}	Continuous	+	Ajani and Tijani 2009
Heterogeneity index of associations X_{18}	Continuous	+/-	Akinyemi *et al* 2012

Source: Author's compilation from past literature

3.4.3 Budgetary Analysis (Gross margin)

This was used to estimate the cost and return in grain trading in the study area. This method has been applied by several authors (Segun-Olasanmi and Bamire, 2010; Agboola, 2011; Balogun *et al* 2012). It is given as:

$GM = TR - TVC$ ..... (3.16)

Where GM = Gross Margin, TR = Total Revenue and TVC = Total Variable Cost (cost incurred in the use of variable inputs)

Mathematically,

$GM = \sum P_iQ_i - \sum R_iZ_j$

Where GM = Gross margin of the traders (Naira)

P_i= Price of i^{th} grain item in Naira

Q_i= Total sales of i^{th} grain item in Naira.

R_i= Unit cost of variable input j used in obtaining i^{th} grain item in naira. The variable cost include, working capital(₦) cost of buying the various grain items, cost of storage, cost of transportation, cost of rent, cost of labour and cost of others inputs

Z_j= Quantity of variable input j used in ith selected size of grain item.

Where i is the number of observations (i= 1, 2, 3, 4, …492)

$P_iQ_i = P_{ri}Q_{ri} + P_{bi}Q_{bi} + P_{mai}Q_{mai} + P_{si}Q_{si} + P_{mi}Q_{mi}$ ..... (3.17)

P_{ri} = average price of rice sold (₦)

Q_{ri} = average quantity of rice sold (kongo/bag)

P_{bi} = average price of beans sold (₦)

Q_{bi} = average quantity of beans sold (kongo/bag)

P_{mai} = average price of maize sold (₦)

Q_{mai} = average quantity of maize sold (kongo/bag)

P_{si} = average price of sorghum sold (₦)

Q_{si} = average quantity of sorghum sold (kongo/bag)

P_{mi} = average price of millet sold (₦)

Q_{mi} = average quantity of millet sold (kongo/bag)

$P_jZ_j = C_{rj}Q_{rj} + C_{bj}Q_{bj} + C_{maj}Q_{maj} + C_{sj}Q_{sj} + C_{mj}Q_{mj} + L_j + S_{fj} + T_{fj} + R_{aj}$ ..... (3.18)

C_{rj} = average cost of bag of rice (₦)

Q_{rj} = average quantity of rice bought (kongo/bag)

C_{bj} = average cost of bag of beans (₦)

Q_{bj} = average quantity of beans bought (kongo/bag)

C_{maj} = average cost of bag of maize (₦)

Q_{maj} = average quantity of maize bought (kongo/bag)

C_{sj} = average cost of sorghum (₦)

Q_{sj} = average quantity of sorghum bought (kongo/bag)

C_{mj} = average cost of bag of millet (₦)

Q_{mj} = average quantity of millet bought (kongo/bag)

L_j = average cost of labour used for all trading operations (₦/month)

S_{fj} = average cost of storage used in trading (₦/month)

T_{fj} = average cost of transport (₦/month)

R_{aj} = average cost of rent (₦/month

3.4.4 Ordinary Least Square Model

The Ordinary Least Square Model is used in estimating the effect of social capital on the profitability of the grain traders. The analytical frame work for the study derives mainly from household utility maximization. In relating social capital to grain traders' profitability the customary or conventional model of household economic behaviour under constrained utility maximization relates the level of grain traders profit directly to the exogenous asset endowments of the traders and variables describing the social and economic environment in which the grain traders' make decision. The grain traders' profitability is hypothesized to be influenced by the independent variables included in the equation below:

$LnE_i = a + \hat{I}X_i + gHC_i + dOC_i + bSC_i + u_i$ ……. (3.19)

where E_i = Profit per capita of grain traders i

SCi = Grain traders' endowment of social capital

HCi = grain traders' endowment of human capital

OC_i = grain traders' endowment of other assets

Xi = Vector of characteristics of the ith grain trader; are the independent variables.

U_i = error term

The explanatory variables were selected based on (Mpuga, 2004; Ajani and Tijani, 2009)

X_1= Gender of the traders (D = 1 for male, otherwise D = 0)

X_2 = Age of the traders (years)

X_3 = Marital status of the traders (D = 1 if married, otherwise D = 0)

X_4 = Household size of traders

X_5 = Years of formal education of the traders (years)

X_6 = Primary occupation (D = 1 if trading, otherwise D = 0)

X_7 = Interest rate on loan (%)

X_8 =Time lag (week)

X_9 = Distance between dwelling place and source of credit (Km)

X_{10} = Payback period (month)

Social capital Variable:

X_{11} = Level of Trust (%)

X_{12} = Social cohesion (%)

X_{13} = Membership density of traders in association

X_{14} = Decision making index (%)

X_{15} = Cash contribution of traders to association (Naira)

X_{16} = Labour contribution of traders to association (Man-day)

X_{17} = Meeting attendance index of traders in association (%)

X_{18} = Heterogeneity index of associations (%)

U_i = Error term

Table 5: *A priori* Expectation of the Exogenous Variables showing the effect of Social Capital on Profitability of the Grain Traders

Variables	Description	Expected Signs	Literatures
Gender of the traders X_1	Dummy	+/-	Fafchamps and Minten, 1998;Akinyemi *et al* 2012
Age of the traders X_2	Continuous	+/-	Fafchamps and Minten, 1998. Akinyemi *et al* 2012
Marital status of the traders X_3	Dummy	+/-	Akinyemi *et al* 2012
Household size of traders X_4	Continuous	+/-	Awoyemi and Ogunyinka,2010
Years of formal education of the traders X_5	Continuous	+	Awoyemi and Ogunyinka,2010
Primary occupation X_6	Dummy	+	Fafchamps and Minten,1998; 1999 Akinyemi *et al* 2012
Interest rate on loan X_7	Continuous	-	Fafchamps and Minten,1998
Time lag X_8	Continuous	-	Akinyemi *et al* 2012
Distance between dwelling place and source of credit X_9	Continuous	-	Fafchamps and Minten,1998
Payback periodX_{10}	Continuous	-	Akinyemi *et al* 2012
Level of Trust X_{11}	Continuous	+	
Social cohesion X_{12}	Continuous	+	
Membership density of traders in association X_{13}	Continuous	+	Gomez and Santor,2001
Decision making index X_{14}	Continuous	+	Kushnirovich,2010
Cash contribution of traders to association X_{15}		+	Awoyemi and Ogunyinka,2010
Labour contribution of traders to association X_{16}	Continuous	+/-	Awoyemi and Ogunyinka,2010
Meeting attendance index of traders in association X_{17}	Continuous	+/-	Awoyemi and Ogunyinka,2010
Heterogeneity index of associations X_{18}	Continuous	+/-	Awoyemi and Ogunyinka,2010

Source: Author's compilation from past literature

3.4.5. Two-Stage Least Squares Regression (2SLS)

Two-stage least squares regression (2SLS) is a method of extending regression to cover models which violate ordinary least squares (OLS) regression's assumption of recursivity, specifically models where the researcher must assume that the disturbance term of the dependent variable is correlated with the cause(s) of the independent variable(s).

Following literature on social capital (Okunmadewa et al, 2005 and Yusuf, 2008), a two-stage least square regression was used to establish a causal relationship between social capital and profitability. The method of instrumental variable was used. These are variables that are determinant of social capital but not traders' profitability.

A structural model of the effect of social capital on profitability is defined in the equation below:

$$X_1 = \alpha_0 + \alpha_1 X_2 + \alpha_2 n_1 + \text{----------} \alpha_{nk-1} + \mu_i$$

Where:

X_1 = Level of profitability

X_2 =Explanatory variables for social capital

n_1 =Vector of exogenous variables

n_k is a variable not in (1) but exogenous

Religion serves as instrumental variable following literature on social capital (Balogun and Yusuf, 2011)

μ_i is the error term

Therefore a reduced form model for social capital (X_2) is specified as follows:

$$X_2 = \pi_0 + \pi_1 n_1 + \text{----------} \pi_{k-1} n_{k-1} + \pi_{2k} + V_2 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.20)$$

The variables X_1 and X_2 are endogenous variables to be determined within the model while the explanatory variables are both the exogenous and endogenous variables included in the model.

The explanatory variables are:

X_1 = Sex of traders (Male 1, 0 Otherwise)

X_2 = Age of traders (Years)

X_3 = Marital status (married 1, 0 otherwise)

X_4 =Household size (number)

X_5 = Year of formal education (Years)

X_7 = Interest charge (%)

X_8= Time lag (Weeks)

X_9= Credit distance (kilometer)

X_{10} = Payback period (Month)

S_1= Aggregate social capital (%)

3.5 Definition of variables used in the empirical models

The explanatory variables used in the multinomial logit were chosen based on extensive review of various literatures on social capital and credit access (Putnam, 1993; 1995, Grootaert, 1999; Guiso *et al* 2004; Heikkila *et al* 2008; Mpuga, 2008; Ajani and Tijani, 2009; Balogun *et al* 2011). The *a priori* expectations between the explanatory variables and access to credit are based on the reviewed literatures which informed their inclusion in the model.

X_1: Sex of traders may create differences in preferences and barriers to social capital formation because of differences in roles and constraints. Compared to men, women tend to have a higher opportunity cost of time, and gender norms sometimes constrain their social interactions. The effect of gender on social capital formation cannot be determined *a priori* and is likely to depend on the type of social capital.

X_2: This measures the age of the grain traders.

X_3: Marital status is whether the grain trader is married or not. It is represented by a dummy variable.

X_4: Household size is the number of people eating from the same pot.

X_5: Years of formal education of the traders is considered in this study as the number of years spent in formal school.

X_6: Primary occupation is a dummy variable which indicates trader's nature of job. It is represented by 1 if trader engages in trading as primary occupation and 0 if otherwise.

X_7: Interest rate charged on credit received by grain traders.

X_8: The time lag for credit is the period between when a loan is applied for and when money is given.

X_9: Distance between traders' dwelling place and source of credit.

X_{10}: Payback period is the period of time to repay the sum of credit obtained.

Social capital dimensions: Social capital dimensions measurement was carried out to examine the effects of social capital on access to microcredit among grain traders. The effectiveness with which social capital, in the form of local associations, can fulfill its role in disseminating information, reducing opportunistic behaviour, and facilitating collective decision making depends on many aspects of the association, reflecting its structure, its membership and its functioning. For this study we focus on eight of the indices adopted by Grootaert (1999) Grootaert and Narayan (2000), Okunmadewa *et al* (2005), Okunmadewa *et al* (2007), Yusuf (2008), Ajani and Tijani, (2009) and Balogun (2011). The social capital variables that were used include: membership density of traders, heterogeneity index of associations, meeting attendance index, cash contribution of traders, decision making index, labour contribution, level of trust and social cohesion. The measurement of each is as described below:

$X_{11:}$ Level of trust: This is the willingness of party (trustor) to be vulnerable to the actions of another party (trustee) based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party. This study focused both on generalized trust (the extent to which one trust people) and on the extent of trust in specific types of people. Trust is also viewed in the context of specific transactions, such as lending and borrowing. Answers to each trust questions are used to generate an index.

X_{12}: Social cohesion: This is defined as ability to secure the long-term well being of all members of a society, including equitable access to available resources, respect for human dignity with due regard for diversity, personal and collective autonomy and responsible participation (Council of Europe, 2005). These are aggregated and are used to generate an index.

$X_{13:}$ Membership density: This is measured by the number of active memberships of each trader in existing associations. A complete inventory of all associations was made at local level institutions; each trader was then given that inventory and asked which associations they were a member of. In other words, the proportion of membership of associations by individuals is found and rescaled to 100. (Grootaert, 1999 and Balogun, 2011).

$X_{14:}$ Decision Making Index: It has been argued that associations, which follow a democratic pattern of decision-making, are more effective than others. This measures participation of the traders in the decision making process. The questionnaire asked association members to evaluate subjectively whether they were "very active" "active" or "not very active" "passive" "very passive" or not participating in the group's decision

making. This response was scaled from 4 to 0 respectively, and averaged across the three most important groups for each respondent. The summation was calculated from subjective responses from the respondents on their rating in participation in decision making in three important associations to them. The responses were averaged across the three associations and multiplied by 100 for each trader.

X_{15}: Cash contribution: All other things being equal, it is presumably a sign of greater interest in the association if one is willing to pay membership dues. This was achieved by taking records of payment of membership dues and other contributions. The summation of the total cash contributed to the various associations, which the traders belong was calculated.

X_{16}: Labour Contribution: This is the number of days that individual members belonging to association claimed to have worked for their associations. This represents total numbers of man- hour's days worked by individual members.

X_{17}: Meeting attendance index: *A priori* it would appear that membership in an association is of little value if one does not attend the meetings with other group members. This index was measured by finding the number of times members of association actually met as a group over a period of time This is obtained by summing up of attendance of the individual members at meeting and relating it to the number of scheduled meetings of the associations. The value is multiplied by 100.

X_{18}: Heterogeneity index: The questionnaire identifies the three most important associations for each trader. For those associations, a number of supplementary questions were asked including the internal homogeneity of the group. This was rated according to twelve criteria: Neighbourhood: Traders living in the same area or not.

Kin/ family group: Whether traders are related both by descent and relatives by marriage or not.

Occupation: If they engage in the same trading activities as their source of livelihood or not.

Economic status: Whether they are of the same economic status in terms of income and occupation or not.

Religion: Whether they are of the same religion (belief in spiritual beings or worship of a god(s)) or not

Political group: If they are of the same political group or not.

Gender: Whether they are of the same gender (male or female) or not

Age: If traders are of the same age or not.

Educational level: Whether traders are of the same educational level or not.

Cultural practices: If traders have the same cultural practices or not.

Belief: Whether they have the same belief or not.

Trust: If traders have the same level of trust or not

On that basis, for each of the factors a yes response was coded 2 while no was coded 1 (Lawal *et al* 2009, Balogun, 2011, and Akinyemi *et al* 2012). A maximum score of 24 for each association represents the highest level of heterogeneity. The score of the three associations were averaged for each trader by dividing by maximum score 72 to obtain the index. The resulting index was then multiplied by 100 (whereby a zero value represents complete homogeneity and 100 correspond to the highest heterogeneity).

3.6. Data limitations and other methodological problems

Study of this nature is often characterized by some shortcomings or constraints which were evident during the course of survey of this research. The study was plagued with problems such as inability of the traders to provide comprehensive information about their trading activities. This arises as a result of improper record keeping of their trading activities. Information on quantity purchased, quantity sold, prices of products purchased, and amount earned were given based on their memory recall and perhaps to conceal information about their trade. Some of these values were found to be unrealistic. Efforts were made to convince them of the importance of the study and their cooperation was subsequently secured. To avoid relying too heavily on inaccurate data, information was triangulated with as many other sources as possible (e.g. researcher's knowledge, existing research by academics among others)

The study was also constrained in terms of getting deeper insights into some questions bordering on profitability of their trading activities. Some of them had to be persuaded before they could respond to the interview. Also effort was made to ensure that sensitive issues were not raised directly. This behavior was found to be as a result of earlier interviews they claimed to have granted but have not benefited from such. However, most of the limitations and problems were overcome through effective supervision. Thus, the above limitations notwithstanding, the responses can be regarded as being representative of grain trading activities in the study area

3.7 Analysis of the objectives

The analysis of the objectives is presented in Table 3

Table 5: Analysis of the objectives

Objectives	Meaning of objectives	Data requirements	Tools of Analyses
1. To profile various dimensions of social capital existing among grain traders in the study area.	This shows the different types of social capital dimensions that exist among grain traders in the study area.	Information on grain traders membership of association, socio-economic and demographic variables	Descriptive statistics, Principal component
2.To examine the effects of social capital on accessing microcredit among the grain traders	This will reveal the determinants of access to microcredit among the grain traders	Information on volume of trade, microcredit sources, socio-economic and credit characteristics.	Multinomial Logit Model
3 To determine the effects of microcredit on profitability of the grain traders	This will examine the effect of microcredit on profitability of the grain traders	Information on credits characteristics, costs of grain sold, total variable costs, gross revenue of the traders	Ordinary Least Square and Budgetary Analysis
4 To investigate effects of social capital on profitability of grain traders.	This will investigate if there is reversal relationship between social capital and profitability of the grain traders	Information on volume of trade, social capital variables, gross revenue of the traders; costs of grain sold, and total variable costs.	Two-Stage Least Square

Source: Author's compilation

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter focuses on the empirical results from the study. It describes respondents' socio-economic and demographic characteristics, membership of associations, participation in the local level institution activities, credit characteristics, factors affecting accessibility to credit, costs and returns profile, factors affecting profitability, social capital, microcredit and profitability of grain traders in the study area.

4.1 Socio-economic/Demographic Characteristics of Respondents

Socio-economic characteristics are important in understanding social capital and credit accessibility and profitability of the grain traders in the area of study. A descriptive analysis of selected socio-economic and demographic variables such as sex, age, marital status, family type, household size, educational level and primary occupation used in the study is presented in Tables 6 and 7.

4.1.1 Sex, Age, Marital Status, Family Type and Household Size of Grain Traders by Sources of Credit

The sex, age, marital status, family type and household size of grain traders are presented in Table 6. Almost four out of every ten of the respondents were male while the rest were female indicating that majority of the grain traders were female. Grain traders used multiple of credit sources to access credit. Most of the grain traders (85.7%) that accessed microcredit from microfinance banks were male. However, 43.7%, 16.7%, 28.6%, 36.4% and 53.9% of the male grain traders accessed microcredit from traders association, community association, cooperative, ROSCAS and friends and relatives respectively. Further, majority of the female grain traders (83.3%) accessed microcredit from community association. However, 56.3%, 71.4%, 63.6% 46.1% and 14.3% of the female grain traders accessed microcredit from traders' association, cooperative society, ROSCAS, friends and relatives and microfinance banks respectively.

Almost two-fifth of the respondents (38.6%) fell into age bracket 41 – 50 years. 10.8%, 30.1%, 17.3% and 3.2% of the traders were in age groups of less than 30 years, 30-

40 years, 51 – 60 years and greater than 60 years respectively. In all the credit categories over two-third of the grain traders were in the age bracket of 30 – 50 years, while the mean age was 43.3 ± 9.4 years. This indicates that higher proportions of sampled grain traders in southwestern Nigeria are mature and are in their active and productive ages.

Almost eighty five percent of the grain traders were married, while the remaining were either single or widowed. Of the married, 65.1% practiced monogamy while the remaining (34.9%) practiced polygamy. Monogamy is common among traders that accessed credit from friends and relatives while polygamy is practiced among traders that accessed credit from traders' association.

Fewer traders (11.6% and 11.2%) had household sizes of 1 -3 members and greater than 8 members respectively. Majority of the grain traders (76.8%) in the study area have household size of between 4 and 8 persons. The mean household size in the study area was about 6.0 ± 2.9 persons per household. This means that an average grain trader's household is moderate.

Table 6: Sex, Age, Marital status, Family type and Household Size of Grain Traders by Sources of Credit

	Traders' Association	Communityy Association	Cooperative	ROSCAS	Friends and Relatives	Banks	Pooled
Variable	%	%	%	%	%	%	%
Sex							
Male	43.7	16.7	28.6	36.4	53.9	85.7	39.2
Female	56.3	83.3	71.4	63.6	46.1	14.3	60.8
Total	100.0	100.0	100.0	100.0	100.0	100.00	100.0
Age							
<30	6.3	0	9.0	18.2	23.0	0.0	10.8
30-40	21.7	16.7	27.6	45.4	15.4	33.3	30.1
41-50	34.1	83.3	43.8	27.3	30.8	52.4	38.6
51-60	28.1	0	16.8	9.1	15.4	14.3	17.3
>60	9.38	0	2.8	0.0	15.4	0.0	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	47.2	45.8	43.3	40.2	45.3	44.1	43.3
SD	9.93	4.2	8.7	7.3	13.9	5.7	9.4
Min	28.0	38.0	20.0	30.0	21.0	33.0	20.0
Max	65.0	50.0	65.0	54.0	65.0	54.0	80.0
Marital status							
Married	87.4	100.0	87.8	81.8	87.4	70.1	85.2
Single	6.3	0.0	5.6	9.1	6.3	29.9	08.1
Widowed	6.3	0.0	6.6	9.1	6.3	0.0	06.7
Divorced	0	0.0	0.0	0.0	0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Family Type							
Monogamous	43.7	50.0	67.4	45.5	70.1	68.2	65.1
Polygamous	56.3	50.0	32.6	54.5	29.9	21.8	34.9
Total	100.0	100.0	100.0	100.00	100.0	100.0	100.0
Household size							
1-3	12.5	11.1	7.1	18.3	0.00	19.1	11.6
4-8	81.3	83.3	85.2	71.7	69.2	61.9	76.8
>than 8	0.0	0.0	7.7	0.0	30.8	19.0	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	6.1	5.5	6.7	6.0	6.1	5.8	6.0
SD	3.6	2.2	1.1	2.2	2.5	3.5	2.9
Minimum	3	2	3	2	2	2	2
Maximum	18	18	14	18	16	16	18

Source: Field Survey 2011

4.1.2 Educational level and Primary Occupation of Grain Traders

Educational level and primary occupation of grain traders are shown in Table 7. The level of education may indicate productivity potential both in farming and non farming enterprises (Abdulahi and Delgado, 1990). The number of years of formal education is known to influence the behaviour, values, exposure and opportunities of individual. Very few (15.2%) of the grain traders had no formal education and majority (52.6%) were educated up to primary school level. About 27.9% of the respondents had secondary education while 4.3% had tertiary education (college of education, polytechnic or university education). However, most of the grain traders that had tertiary education patronized microfinance banks.

The distribution of grain traders by primary occupation shows that majority (92.1%) were primarily engaged in grain marketing while others trade in grain as secondary occupation.

Table 7: Educational level and Primary Occupation of Grain Traders by Sources of Credit

	Traders association	Community association	Cooperative	ROSCAS	Friends and Relatives	Banks	Pooled
Variable	%	%	%	%	%	%	%
Educational level							
No formal	15.6	16.7	16.8	27.3	23.1	4.8	15.2
Primary completed	50.0	50.0	50.2	27.3	46.1	57.1	52.6
Secondary completed	28.1	33.3	30.6	45.4	30.8	28.6	27.9
Tertiary completed	6.3	0.0	2.4	0.0	0.0	9.5	04.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	7.8	7.3	7.1	7.3	7.1	9.6	7.7
SD	3.6	3.7	1.1	5.2	4.2	3.5	3.9
Minimum	0.0	2.0	0.0	0.0	0	0	0
Maximum	16.0	12.0	15.0	12.0	12.0	16.0	16.0
Primary Occupation							
Trading	78.13	83.33	89.80	100.0	100.0	100.00	92.07
Others	21.87	16.67	10.20	0.00	0.00	0.00	7.93
Total	100.0	100.0	100.00	100.0	100.00	100.0	100.0

Source: Field Survey 2011

4.2 Dimensions of Social Capital existing among Grain Traders

4.2.1 Grain Traders' Membership in different Types of Local Level Institutions

Grain traders in the study area belonged to various associations. These associations include: Traders' association/business group, Cooperative societies, Credit/finance group (formal), Religious group, Cultural association, Gender Association, Political group, NGOs, Trade Union, Recreational group, Age group, and Social service group. Table 8 shows membership of grain traders in different types of Local Level Institutions (LLIs). The profile showed that traders in the study area belonged to more than two associations. The most prominent association amongst the traders was Traders' association representing about 26.9% of population of traders. However, Cooperative societies, Religious group and Credit/finance group represented 16.7%, 14.3% and 7.8% respectively. Grain traders joined local level institutions because of the benefit inherent in them. Given the heavy contributions and level of participation of members in group activities because of economic gains and spiritual benefits, people are always willing to join the groups.

Table 8: Grain Traders' Membership in different Types of Local Level Institutions

Local level institutions	Grain traders number	% of Total
Traders' associations/business group	403	26.9
Cooperative societies	250	16.7
Credit/finance group (formal)	117	7.8
Religious group	214	14.3
Cultural association	64	4.3
Gender association	90	6.0
Political group	110	7.3
NGOs	33	2.2
Trade union	58	3.7
recreational group	13	0.9
Age group	45	3.0
Social service group	104	6.9
Total	1501	100.0

Source: Field Survey 2011

4.2.2 Membership Density, Heterogeneity and Decision Making Indices of Grain Traders by Access to Credit

Table 9 presents membership density, heterogeneity and decision making indices of grain traders by access to credit. The result shows that each grain trader, belong to an average of three associations. However, for the traders with membership density of greater than 4, the highest belonged to ROSCAS while the least belonged to cooperatives.

Heterogeneity index of traders in associations shows that almost forty percent of the traders that were in 61-80% subgroup had the highest heterogeneity index. Across different credit groups, there is small variation in heterogeneity index. Community association had the highest (76.4%), while the least was from cooperative (65.6%). Considering this, it could be explained that individual in cooperative must have good knowledge of intended borrowers. With grain traders mean heterogeneity index of about 70.0%; associations in the study area were considered diverse. The greatest diversity was found among traders that sourced their credit from community association.

Decision Making Index (DMI) is moderate in all the credit sources with an average of 66.3%. Members participate in three out of five of decisions affecting their associations. The result supports Balogun (2011) that clients of microcredit institutions in rural southwest participate in three out of the five decisions in their associations. Decision making process is highest in the ROSCAS and lowest in the microfinance bank.

Table 9: Membership Density, Heterogeneity and Decision Making Indices of Grain Traders

	Traders	Community	Cooperative	ROSCAS	Friends and Relatives	Banks	Pooled
Variable	%	%	%	%	%	%	%
Membership density							
1	12.0	11.1	10.1	8.7	20.5	3.7	11.5
2	25.9	22.2	23.6	13.1	27.3	29.6	24.7
3	27.1	22.2	35.8	30.4	22.7	37.0	30.5
4	22.9	33.3	20.3	34.8	18.1	18.5	22.1
>4	12.0	11.2	10.2	13.0	11.4	11.2	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	3.0	2.0	3.0	3.0	3.0	3.0	3.0
SD	1.2	0.0	1.2	1.1	1.3	1.1	1.2
Minimum	1	1	1	1	1	1	1
Maximum	5	5	5	5	5	5	5
Heterogeneity Index %							
1-20	00.0	00.0	00.0	0.0	0.0	0.0	00.0
21-40	00.0	00.0	00.0	0.0	0.0	0.0	00.0
41-60	34.4	00.0	46.9	36.4	38.5	33.3	34.6
61-80	43.7	50.0	39.8	27.3	30.7	42.9	37.6
>80	21.9	50.0	13.3	36.4	30.8	23.8	27.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	68.4	76.4	65.6	68.8	71.8	67.7	69.9
SD	11.7	8.0	11.2	12.8	13.9	11.5	13.5
Minimum	50.0	65.0	50.0	52.0	56.0	50.0	50.0
Maximum	89.0	83.0	100.0	83.0	100.0	85.0	100.0
Decision Making Index %							
1-20	00.0	00.0	00.0	0.0	0.0	0.0	00.0
21-40	00.0	00.0	00.0	0.0	7.7	15.5	0.2
41-60	00.0	16.7	26.5	30.0	7.7	74.5	22.7
61-80	34.4	83.3	69.9	60.1	84.6	10.0	74.6
>80	65.6	00.0	3.6	9.9.	0.0	20.0	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	64.2	64.8	66.3	68.7	64.1	57.1	66.3
SD	7.3	4.5	8.9	11.9	10.3	25.5	8.9
Minimum	55.0	56.0	56.0	56.0	33.0	20.0	56.0
Maximum	77.0	67.0	100.0	89.0	78.0	100.0	100.0

Source: Field Survey 2011

4.2.3 Meeting Attendance Index, Cash Contribution and Labour Contribution of Grain Traders by Access to credit

Meeting attendance index, cash contribution and labour contribution of grain traders by access to credit is presented in Table 10. Grain traders attended over 80% of association meetings per annum. Much importance is attached to meeting attendance because it shows some levels of commitment. Majority of the grain traders (62.7%) had greater than 80.0% meeting attendance index while the subgroup 1-20% had less than 1.0% meeting attendance. On the average grain traders have meeting attendance index of between 87.0% and 90.4% across the different sources of microcredit.

Cash contributions are made by traders to their associations. Part of this savings was used for the general running of the associations while part was loaned as microcredit to members, who signified interest for loans. Cash contribution was generally low across the different credit sources. Majority of the grain traders (55.17%) paid cash contribution of between ₦501 and ₦1000 per month while the least (1.4%) paid cash contribution of greater than ₦3000 per month. This might be because these institutions required some level of commitment with them before individuals or the group could be considered for credit. However, grain traders that have Microfinance Banks funding their businesses made the highest contribution to their associations whereas those with Traders Association contributed the least to their association.

Some associations require some form of labour activities from their members towards the development of the associations and their communities. Active members are usually recognized and considered when they require assistance from the associations. Majority (57.6%) of the grain traders contributed about 1- man-day per month, while only 0.20% contributed more than 4- man-day per month. Grain traders that sourced credit from traders association, community association, cooperatives, ROSCAS, friends and relatives and microfinance bank contributed 1.06, 1.76, 1.32, 1.40, 1.71, and 1.57 man-days per month of labour to their associations respectively. Labour contribution was low in the study area. This may have adverse effect on the sustainability of these institutions.

Table 10: Meeting Attendance Index, Cash Contribution and Labour Contribution of Grain Traders

	Traders	Community	Cooperative	ROSCAS	Friends and Relatives	Banks	Pooled
Variable	%	%	%	%	%	%	%
Meeting Attendance Index %							
1-20	0.00	33.33	1.03	0.00	0.00	0.00	0.81
21-40	0.00	16.67	1.54	0.00	0.00	4.76	1.22
41-60	0.00	33.33	4.62	0.00	23.08	4.76	3.87
61-80	9.09	16.67	28..72	9.09	15.38	19.05	31.36
>80	90.91	0	64.10	90.91	61.54	71.43	62.73
Total	100.0	100.0	100.0	100.0	100,0	100.00	100.0
Mean	87.01	89.03	87.03	90.41	82.94	81.7	84.3
SD	12.56	6.16	16.11	9.01	17.16	10.0	12.3
Minimum	60.0	83.0	30.0	71.0	57.0	24.0	30.0
Maximum	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cash Contribution (₦)							
1- 500	31.18	50.00	21.33	8.70	4.48	5.56	20.08
501-1000	62.94	40.00	57.33	56.52	43.28	45.83	55.17
1001-2000	4.71	10.00	10.67	21.74	40.30	26.39	15.62
2001-3000	1.18	0	8.67	4.35	11.94	19.44	7.71
>3000	0	0	2.00	8.70	0	2.78	1.42
Total	100.0	100.0	100.0	100.0	100.0	100.00	100.0
Mean	636.06	650	927.67	1178.26	1206.72	1289.58	924.91
SD	290.49	317.11	661.51	892.37	620.23	748.52	628.90
Minimum	300	300	250	300	400	400	250
Maximum	2400	1300	4000	3500	2500	3200	4000
Labour contribution (man days)							
0-1.0	77.06	20.0	62.00	47.83	22.39	44.44	57.61
1.1-2.0	15.29	60.0	20.00	26.09	55.22	30.56	25.76
2.1-3.0	3.53	20.0	12.67	21.74	13.43	18.06	11.16
3.1-4.0	4.12	0	5.33	4.35	8.96	5.56	5.27
>4.0	0	0	0	0	0	1.39	0.20
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean	1.06	1.76	1.32	1.40	1.71	1.57	1.34
SD	0.72	0.69	0.90	0.98	0.86	1.03	0.89
Minimum	0.5	1	0.5	0.38	0.50	0.5	0.38
Maximum	4	3	4	3.38	3.88	5.25	5.25

Source: Field Survey 2011

4.2.4 Trust and Cohesion Indices of Grain Traders by Access to Credit

Trust and cohesion indices of grain traders, by access to credit are presented in Table 11. Trust which may be understood as an optimistic expectation or belief regarding other agents' behavior is generally low among the grain traders. Grain traders in the study area had average trust index ranging from 44.6% to 63.7%. Grain traders that accessed their credit from ROSCAS had highest (63.7%) trust index while the grain traders that accessed their credit from banks had the lowest (44.6%) trust index in the study area.

Cohesion index are also generally low among the grain traders. Social cohesion has to do with ability to secure the long-term well being of traders. Grain traders in the study area have average cohesion index ranging from 39.6% to 65.3%. Grain traders that accessed their credit from community association have highest (65.3%) cohesion index while the grain traders that accessed their credit from traders' association have the lowest (39.6%) cohesion index in the study area.

Table 11: Trust and Cohesion indices of grain traders

	Trust Index %	Cohesion Index %
Traders' Association	50.9	39.6
Community	57.3	65.3
Cooperative	57.8	51.2
ROSCAS	63.7	55.3
Friends and Relatives	57.5	53.2
Banks	44.6	46.0
Pooled	53.7	47.5

Source: Field Survey 2011

4.3 Credit Financing Activities of the Grain Traders

4.3.1 Major Credit Sources of Grain Traders

Different credit sources of grain traders are presented in Table 12. More of the traders (34.5%) obtained credit from Traders Association. Cooperative societies accounted for 30.4% of the credit needs of the traders while 14.7% of the traders sourced their credit from microfinance banks. However, friends and relatives, ROSCAS and community association accounted for 13.6%, 4.7% and 2.0% respectively of the sources of credit obtained by the traders.

Table 12: Major Credit Sources of Respondents

Major Credit source	Frequency	Percentage
Traders association	170	34.6
Community association	10	2.0
Cooperative society	150	30.5
ROSCAS	23	4.7
Friends & relatives	66	13.4
Microfinance banks	73	14.8
Total	492	100.0

Source: Field survey 2011

4.3.2 Credit Characteristics of the Grain Traders

Table 13 reveals the credit characteristics of the grain traders in the study area. Average interest rate in the study area was 4.8%. Interest is the unit cost for taking credit. *Ceteris paribus*, as interest rate increases, credit demand decreases and vice versa. The distribution of the interest rates charged by the credit sources showed that cooperative society charged the highest interest rate and the least is credit from relatives and friends. Grain traders travelled an average of 1.23 kilometers to get to the financial institutions for credit. The farthest credit source to traders is Community Association (2.79). Microfinance banks (0.51) and Cooperative societies (1.96) are nearer sources of credit to the traders.

Payback period for loans was about seven months. Credits from community associations have the longest payback period of 8 months while other credits sources have payback period of less than seven months. The implication is that these loans are short term and borrowers are expected to invest their loans in business activities that are capable of yielding quick returns.

The time lag for credit was two weeks and one day on average. Credit sourced from ROSCAS had the longest time lag (3.82 weeks) among the credit sources while the least was community association (2.17 weeks)

An average of ₦145, 489.30 was requested as loan by the grain traders while only ₦67, 480.13 was approved by the credit institutions. The granted/requested ratio is 0.46 (gap in credit request). Following from this, credit demanded was not commensurate with credit supplied as less than half of the amount requested as loan from credit sources was granted.

Table 13: Credit Characteristics of Grain Traders

	Traders' Association		Community Association		Cooperative Association		ROSCAS		Relatives & Friends		Microfinance		Pooled
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean
Interest charged	6.25	4.212	1.67	0.58	9.41	4.08	4.54	1.72	3.38	1.38	5.38	2.88	4.797
Credit distance (Km)	2.17	1.83	2.79	2.59	1.96	1.77	2.24	0.92	1.66	0.15	0.51	0.26	1.23
Time lag (week)	3.15	1.13	2.16	1.72	3.74	1.14	3.818	1.47	3.38	1.26	3.76	0.70	2.13
Amount Required (Naira)	96718.75	7231.14	26000.0	8747.5	184257.7	2554.6	127272.7	14033.5	80015.38	7929.5	358671.4	19372.0	145489.3
Amount Granted (Naira)	41406.25	9005.62	24000.0	3372.8	100224.5	23624.6	87272.7	8016.25	34015.38	6296.4	127961.9	2596.6	67480.13
Gap in credit request	0.43		0.92		0.54		0.69		0.43		0.36		0.46
Payback period (Month)	4.65	2.58	8.00	3.09	6.92	4.37	6.00	3.95	4.61	3.07	3.81	1.89	6.51

Source: Field survey 2011

4.4 Factors Affecting Accessibility to Credit among Grain Traders

Table 14 presents the results of factors affecting credit access among grain traders. As indicated in the methodology, five responses were used as dependent variables. These are credit sources defined as Traders association, Cooperative, ROSCAS, Relatives and friends and Microfinance banks. The dependent variable Cooperative was used as the base category or reference cell.

4.4.1 Credit Access by Grain Traders Sourcing Credit from Traders' Association:

Table 14 depicts that interest rate charged on loan (X_7), credit distance (X_9), payback period (X_{10}) and labour contribution (X_{15}), were important variables determining credit access among the grain traders sourcing credit from traders' association compared with those from cooperatives. In case of interest rate charged by credit institutions, the odds of traders accessing credit have negative coefficient and is significant at 5% level. The odds that grain traders would access credit from traders' association relative to cooperatives decreased as interest rate increases. The result is in consonance with the natural demand law that says increase in interest rate leads to decrease in quantity of credit demanded. On the other hand, the coefficient of the distance from the credit source is positive and significant at 5% level. Thus, odds ratio of credit access from traders association increases the farther the traders' dwelling places are. This result disagrees with Mpuga (2004) that the odd of household requesting credit from a source decreases as credit distance increases but it corroborates Balogun (2011) and Balogun and Yusuf (2011) that shortage in supply of credit leads to rural household searching for money to finance their businesses irrespective of the distance of the source to their dwelling place.

It was observed that coefficient of payback period of the traders has a negative sign and significant at 5% level. This indicates that a unit increase in payback period of traders will decrease the odds (probability) of sourcing credit from traders association by 85%. The implication is that, a longer payback period will decrease the credit volume and lower credit supply. The result reveals that labour contribution coefficient is positive and significant at 5%. In effect a unit increase in labour contribution leads to increase in the likelihood of traders accessing credit from traders' association by 101% ($p<0.05$). The result aligns with Ajani and Tijani (2009) that as more labour is contributed by household members into association activities, the probability of considering them for credit increases

Table 14: Factors Affecting Accessibility to Credit among Grain Traders

Explanatory Variable	Traders' Association		ROSCAS		Relatives & Friends		Microfinance Banks	
	Coefficient	Odds Ratio	Coefficient	Odds Ratio	Coefficient	Odds Ratio	Coefficient	Odds Ratio
Sex	0.4605	1.5849	-0.5072	0.6022	1.8370	6.2774	3.2779	26.5194
	(0.90)		(-0.41)		(1.14)		(3.70)***	
Age	0.0202	1.0204	-0.2264	0.7974	-0.0124	0.9877	0.0860	1.0899
	(0.69)		(-2.29)**		(-0.16)		(1.49.)	
MaritalSt	0.1500	1.1618.	0.9665	2.6286	0.0345	1.0351	-19.0519	5.32.e-09
	(0.32)		(1.09)		(0.03)		(-3.41)***	
Hhsize	0.1149	1.1218	0.2356	1.2657	0.3470	1.4148	-0.0063	0.9937
	(1.19)		(1.33)		(1.34)		(-0.04)	
Yrsch	0.0542	1.0557	-0.1115	0.8945	0.0330	1.0335	0.0568	1.0584
	(0.81)		(-0.55)		(0.17)		(0.52)	
Pryoccpat	0.7644	0.4656	26.9393	5.01e+11	19.8794	4.30e+08	20.6130	8.96e+08
	(-1.17)		(3.02)***		(1.58)			
Incharge	0.1458	0.8654	-0.2407	0.7861	-0.9645	0.3812	-0.0603	0.9415
	(-2.40)**		(-1.63)		(-3.38)***		(-0.64)	
Timlag	-0.2922	0.7466	0.4013	1.4938	0.2061	1.2289	-0.0929	0.9113
	(-1.32)		(0.75.)		(0.37)		(-0.29.)	
Credistance	0.2828	1.3268	0.6520	1.9193	0.0706	1.0731	-0.4886	0.6135
	(2.81)**		(1.93)*		(0.23)		(-1.65)	
Paybkperiod	-0.1679	0.8454	-0.2684	0.7646	-0.4859	0.6152	-0.4057	0.6665
	(-2.10)**		(-1.77)*		(-1.96)*		(-2.87)**	
Trustindex	-0.2544	0.7754	2.9637	19.3697	-1.7489	0.1740	-0.1555	0.8560
	(-0.54)		(2.57)**		(-1.07)		(-0.24)	
Coheindex	-0.3698	0.6909	-2.0556	0.1280	0.4590	0.6319	0.6760	1.9660
	(-0.68)		(-1.49)		(-0.32)		(0.86)	
MembershipD	-0.01161	0.9885	-0.0352	0.9654	-0.0207	0.9795	-0.0042	0.9958
	(-1.17)		(-1.10)		(-0.67)		(-1.11)	
Decindex	-0.0021	0.9979	-0.0593	0.9424	0.0037	1.0037	0.0483	1.0495
	(-0.11)		(-1.56)		(0.07)		(1.98)*	
Cashcontrib	-0.0251	0.9752	-0.0057	0.9943	-0.0060	0.9940	0.0284	1.0288
	(-1.57)		(-0.20)		(-0.19)		(1.58)	
LaborContrib	0.0113	1.0193	-0.2857	0.7515	-0.0650	0.9371	-0.0278	0.9726
	(2.13)**		(-2.28)**		(-1.83)*		(-1.52)	
Meeting attend	-0.0113	0.9888	0.0325	1.0330	0.0798	1.0831	0.0420	1.0429
	(-0.68)		(0.88)		(1.61)		(1.92)*	
Heterindex	0.0075	0.9926	0.1649	1.1792	0.0377	1.0384	-0.0440	0.9570
	(-0.17)		(1.68)*		(0.27)		(-0.60)	
Constant	1.4667		-28.8303		-17.8979		-10.0027	
	(0.31)							
Observation	273							
R^2	0.5022							
Log-Likelihood	-130.5844							

Absolute value of z statistics in parentheses, * significant at 10%, ** significant at 5% and *** significant at 1% Base category in the dependent variables is the cooperative.
Source: Field survey 2011

4.4.2 Credit Access by Grain Traders Sourcing Credit from ROSCAS

Table 14 shows that age (X_2), primary occupation (X_6), credit distance (X_9), payback period (X_{10}), trust index (X_{11}), labour contribution (X_{16}) and heterogeneity index X_{18}) were important variables in accessing credit from ROSCAS. It was observed that age of the traders is negatively significant in accessing credit from ROSCAS. This result implies that as the grain traders advances in age, access to credit decreases. An additional year to the age of traders would decrease the odds that he/she obtains credit from ROSCAS by 79.7% ($p<0.05$). Primary occupation of grain traders is positive and significant at one percent level. Grain traders' engagement in trading as primary occupation increases the odds (probability) of accessing credit from ROSCAS. The coefficient of the distance from the credit source is positively significant at ($p<0.1$). Thus, odds ratio of access to credit from ROSCAS increases the farther the traders dwelling place. The implication is that irrespective of distance, traders would pursue credit because of the dire need and shortage in supply. The payback period of the traders has a negative sign and significant at 10% level. This indicates that a unit increase in payback period of traders will decrease the probability of sourcing credit from ROSCAS by 76.5%. The implication is that, a longer payback period will decrease the credit volume and lower credit supply.

Trust index is positive and significant at 5 percent. A unit increase in trust index will lead to increase in odds of traders accessing credit from ROSCAS by 193.7% ($P<0.1$). Trust that can be described as confidence in the reliability of others is imperative in accessing credit from ROSCAS.

Labour contribution is negatively significant in accessing credit from ROSCAS. Hence a unit increase in labour contribution will lead to a decrease in likelihood of grain traders accessing credit by 75.2%. This result disagrees with Ajani and Tijani (2009) that as more labour is contributed into association activities, the likelihood of accessing credit increased. However, heterogeneity index is positively significant in accessing credit from ROSCAS. In this respect, as diversity increases among the traders in association so also there will be an increase in the odds of accessing credit from ROSCAS.

4.4.3 Credit Access by Grain Traders Sourcing Credit from Relatives and Friends

The variables that determine accessibility of credit from relatives and friends include interest rate charged (X_7), payback period (X_{10}), and labour contribution (X_{16}). The coefficient of interest rate is negative and significant ($P<0.01$). Thus a percentage increase in interest rate decreases the odds of accessing credit from relatives and friends. In case of the payback period, the coefficient shows negative sign and is significant for credit from relative and friends. The sign implies that as payback period increases the likelihood of accessing credit from relatives and friends decreases. Labour contribution of the grain traders is negative and significant for traders accessing credit from friends and relatives. A unit increase in labour contribution will lead to decrease in the likelihood of traders accessing credit.

4.4.4 Credit Access by Grain Traders Sourcing Credit from Microfinance Banks

The variables that determine accessibility to credit include sex (X_1), marital status (X_3), payback period (X_{10}), decision index (X_{14}) and meeting attendance index (X_{17}). Being a male increase the probability of accessing credit from microfinance banks. Marital status is negatively significant at 1 percent. This implies that being married decreases the probability of accessing credit from microfinance bank. The result aligns with Balogun (2011) that demand for credit decreases for the married microcredit household head seeking credit from commercial banks.

Also, payback period coefficient shows negative sign and is significant at 5 percent level for traders sourcing credit from microfinance banks. As payback period increases the likelihood of accessing credit from microfinance banks decreases. However, decision making index has a positive significant coefficient of 0.0483. This implies that as percentage participation in decision making of traders increases, the probability of their access to credit from microfinance banks will also increase. This may be due to the fact that active participation when decisions are made in association shows their level of commitment and sense of belonging in the group which trickles down to increase their credit access. The coefficient of meeting attendance index is positively significant implying that as the percentage of scheduled meetings attended by the traders' increases, their probability of access to credit from microfinance banks increases. Meeting attendance is a sign of commitment. It might mean that only those who actively participate in networks can capture the gains.

4.5 Profit Analysis

This section discusses the costs and returns of grain traders based on their sources of microcredit. Profitability is the primary goal of all business ventures. Without profit the business will not survive in the long run. Profit is measured with income and expenses. Grains are bought and sold; income is generated for the traders. Table 15 shows the summary statistics of the costs and return profile of grain traders based on their sources of microcredit.

The table shows that estimated monthly average expenditure of grain traders in the study area was ₦483, 776.80. The monthly expenditure on purchase of different grain such as rice, beans, maize, sorghum and millet was ₦440, 521.19 which constituted about 91.1% of the total grain traders' expenditure. Other operating items such as cost of labour, transport, storage and shop rent represented only 8.9% of the expenditure. The monthly average operating expenditure of grain traders in the study area was ₦43, 255.61. The second most important item is the cost of transport representing about 5.8% of the traders' expenditure. Labour cost constituted the highest expenditure (₦14, 683.56) among traders sourcing credit from microfinance banks and lowest (₦3, 670.00) among traders sourcing credit from community association. In the case of storage input, expenditure was ₦2, 141.30 and ₦1, 248.00 for traders sourcing credit from ROSCAS and community association respectively. The average expenditure on transportation is highest (₦66, 300.00) among traders sourcing credit from community associations and lowest (₦39, 223.00) among traders sourcing credit from traders association. Also, the average expenditure on shop rent is highest (₦10, 756.00) among traders sourcing credit from community association and lowest (₦2, 896.09) among traders sourcing credit from ROSCAS. It was observed that 15.2%, 10.6%, 10.2%, 8.6%, 5.1% and 3.4% of the total expenditure accounted for operating cost of the grain traders in community association, trader association, banks, cooperatives, friends and relatives and ROSCAS respectively. However, over 89.2% of the traders' expenditure was as a result of stocking their shops while the remaining went for the operating services.

Among rice traders in the study area, those sourcing credit from community associations expended highest expenditure (₦232, 466.00) on rice while the lowest expenditure (₦57, 116.72) was recorded for rice traders sourcing credit from friends and relatives. In the case of beans traders, those that sourced their credit from traders associations recorded the highest expenditure (₦146, 591.70) on beans while the lowest (₦56, 367.40) expenditure was recorded for beans traders sourcing credit from microfinance banks. For maize traders in the study area, the highest expenditure (₦150, 987.50) was recorded by maize traders sourcing credit from friends and relatives while the lowest expenditure (₦23, 737.94) was spent by maize traders sourcing credit

from traders association. Also, for sorghum traders, the highest expenditure (₦360, 808.22) was spent by those that sourced their credit from microfinance banks while the lowest (₦3, 330.00) was recorded for those that sourced their credit from community associations. In the case of millet traders in the study area, the highest expenditure (₦83, 641.79) was spent by traders sourcing credit from friends and relatives while the lowest expenditure (₦13, 521.74) was spent by millet traders sourcing credit from ROSCAS.

In all the microcredit sources, the highest expenditures were recorded for rice followed by beans. This implies that in the study area, the bulk of grain traders engage in rice trading. The result also indicates that the mean monthly revenue of the traders in the study area was ₦496, 135.80 while the gross margin was ₦12, 359.0. The benefit cost ratio and labour efficiency analysis were 1.03 and 57.16 respectively. A business is viable if its benefit cost ratio is equal to or greater than one. The output earning per ₦1 expenditure on labour was ₦57.16 showing that labour was well managed. Operating Expense Ratio was 8.71. This connotes that 8.71 of the total/gross revenue was used to cover the operating expenses. The lower the operating expenses are, the more profitable is the business. Return per Naira invested was 0.0255. This implies that for every ₦1 invested in grain trading, there is a return of ₦2.60 to the traders. Also, the profitability index of the grain traders is 0.0249; indicating that the traders earned N0.0249 on each naira invested in trading i.e. 2.5k for every 100k invested. These measures of performance indicate that grain trading in the study area is viable and profitable. However, going through the microcredit sources, it was revealed that grain traders sourcing credit from ROSCAS associations recorded the highest profit followed by traders sourcing credit from banks and traders association respectively whereas traders that sourced their credit from community, cooperatives and friends and relatives recorded no profit during the period.

Table 15: Summary Statistics of the Costs and Return Profile of Grain Traders

	Traders	Community	Cooperative	ROSCAS	Friends and Relatives	Microfinance Banks	All
Cost Items	Mean Amount (₦)						
Variable Inputs							
Labour	7770.30 (1.50%)	3670.0 (4.48%)	8338.00 (1.7%)	5673.04 (1.1%)	6541.79 (1.35%)	14683.56 (3.9%)	8679.58 (1.8%)
Storage	1417.29 (0.27%)	1248.0 (0.23%)	1809.67 (0.37%)	2141.30 (0.43%)	1634.32 (0.34%)	1308.90 (3.4%)	1580.47 (0.3%)
Transport	39,223 (7.6%)	66300.0 (12.3%)	26694.67 (5.5%)	6213.04 (1.2%)	13126.87 (2.7.%)	19436.99 (0.34%)	27944.04 (5.8%)
Shop Rent	6536.83 (1.26%)	10756.0 (2.0%)	4941.88 (1.01%)	2896.09 (0.58%)	3166.41 (0.65%)	3445.75 (0.90%)	5051.53 (0.9%)
Total 1	54947.44 (10.59%)	81974 (15.2%)	41984.22 (8.6%)	16923.48 (3.4%)	24469.4 (5.05%)	38875.21 (10.2%)	43255.62 (8.9%)
Grain cost							
Rice	218948.50 (42.2%)	232466.0 (43.2%)	208008.0 (42.6%)	130554.3 (26.3%)	57116.72 (11.8%)	63087.67 (16.6%)	166697.9
Beans	146591.70 (28.3%)	133045.0 (24.7%)	73311.60 (15.0%)	90379.57 (18.2%)	71694.48 (14.8%)	56367.40 (14.8%)	97859.76
Maize	23737.94 (4.6%)	54570.0 (10.1%)	71498.20 (14.6%)	128426.1 (25.8%)	150987.5 (31.2%)	128994.7 (33.9%)	76658.11
Sorghum	50284.71 (9.7%)	3330.0 (0.62%)	15055.80 (3.1%)	117413.9 (23.6%)	96201.49 (19.9%)	360808.22 (94.7%)	49899.23
Millet	24370.00 (4.7%)	33000.0 (6.1%)	65446.60 (13.4%)	13521.74 (2.7%)	83641.79 (17.3%)	56881.37 (14.9%)	49406.15
Total 2	463932.86 (89.4%)	516873.0 (96.0%)	446168.38 (91.4%)	480295.120 (96.6%)	459641.9 (94.9%)	342139.29 (89.8%)	440521.19 (91.1%)
TOTAL COST	518880.30	538385.0	488152.6	497219.1	484111.30	381014.50	483776.80
Revenue							
Rice	264661.80	275250.0	265250.00	153260.9	131529.90	140034.20	223311.40
Bean	214329.00	182200.0	98066.67	119167.4	86474.48	138997.50	145193.20
Maize	41934.12	65320.0	69167.8	456876.8	153125.6	192104.80	1071400.40
Sorghum	12876.59	3330.0	15055.8	886.95	10747.01	31495.08	15253.51
Millet	96580.30	3450.0	7513.33.0	1500.0	9440.29	3938.35	5271.81
Total Revenue	602121.10	529520.0	485053.6	731692.0	391317.2	505670.00	496135.80
Profit	83240.74	-8865.0	-33099.0	234472.9	-92794.10	125555.50	12359.0
Labour efficiency	77.4	144.3	58.17	128.98	59.81	34.44	57.16
Operating Expense Ratio	9.13	15.48	8.66	2.31	6.25	7.69	8.71
Return per Naira invested	0.160	-0.016	-0.006	0.472	-0.192	0.327	0.0255
Profitability Index	0.1382						

Source: Field Survey 2011

4.6. Effects of Microcredit on Profitability of Grain Traders

4.6.1 Profit of Grain Traders by Sources of Credit

Profit of grain traders by sources of credit is presented in Table 16. Among rice and beans traders in the study area, the traders that sourced their credit from community association recorded the highest profit of ₦73, 531.67 per month while the lowest profit of ₦12, 627.50 per month was recorded for traders that sourced their credit from friends and relatives.

In the case of maize/sorghum/millet traders, those that sourced their credit from traders' association recorded the highest profit of ₦47, 429.80 per month while the lowest profit of ₦ 6, 120.00 per month was recorded for traders that sourced their credit from ROSCAS.

Table 16: Profit of Grain Traders by Sources of Credit

	Traders association Mean Amount ₦/ month	Community association	Cooperative	ROSCAS	Friends and Relatives	Banks
Items						
Rice/Beans						
Purchase	278,873.00	263,211.70	264949.30	508,653.80	100,413.50	154,015.60
Labour cost	940.91	0.00	1,030.27	1,750.00	3,200.00	1,906.25
Storage cost	839.09	490.00	754.87	512.50	704.00	356.25
Transport cost	1,460.91	366.67	1,985.66	2,287.50	890.00	543.13
Total Expend	282,113.91	264,068.30	268,720.10	513,203.80	105,207.50	156,821.30
Total revenue	319,460.70	337,600.00	301,742.80	581,300.00	117,835.00	177,885.00
Profit	37,346.79	73,531.67	33,022.76	68,096.25	12,627.50	21,063.75
Maize/Sorghum/Millet						
Purchase	177,820.00	198,830.00	216,966.10	57,120.00	89,385.00	36,835.00
Labour cost	1,200.00	2,750.00	909.28	0.00	0.00	0.00
Storage cost	60.20	200.00	621.48	0.00	1,283.33	250.00
Transport cost	690.00	115.00	1,250.74	3,500.00	1,700.00	600.00
Total Expend	179,770.20	20189.50	219,747.60	60,620.00	92,368.33	376.85
Total revenue	227,220.00	223,930.00	248,107.60	66,740.00	109,133.30	46,625.00
Profit	47,429.80	22,035.00	28,360.00	6,120.00	16,765.00	8,940.00

Source: Field Survey 2011

4.7 Effects of Social Capital on Profitability of Grain Traders

4.7.1 Profit of Grain Traders by Heterogeneity Index

Profit of traders by heterogeneity index of their local associations is presented in Table 17. As heterogeneity index of the traders in their local institutions increases and becomes more diverse profitability of the traders increased. Traders with heterogeneity index less than 40% made no profit at all. Traders with heterogeneity index greater than 80% recorded an average profit of ₦32, 375.44 per month while the lowest profit was recorded for traders in heterogeneity index of sub- group 41-60%. This implies that as the traders become more diverse in terms of kin group, religion, cultural practices, educational level, belief, and trust etc in their local level institutions they obtained more profit.

Table 17: Profit of Traders by Heterogeneity index

Heterogeneity Index %	Average amount of profit (₦/ month)
1-20	-
21-40	-
41-60	24,904.57
61-80	31,478.32
>80	32,375.44

Source: Field Survey 2011

4.7.2 Profit of Grain Traders by Density of Membership

Table 18 depicts the profit of traders by density of membership. Grain traders belonging to subgroup with one membership in local level institution obtained the highest profit of ₦57, 997.61 per month while the lowest profit of ₦8, 510.15 was recorded for traders under the subgroup of 4 density of membership. The result however, shows no definite trend.

4.7.3 Profit of Traders by Decision making index

Profit of grain traders by decision making index in the association is presented in Table 19. Traders that participated in subgroup 1-20% decision making in their local level institutions obtained no profit. Traders in subgroup of 21-40% decision making index obtained the highest profit of ₦61, 000 while the traders in subgroup of 41-60% decision making index obtained the lowest profit of ₦21, 857.62. The traders that are relatively less active in their associations obtained more profit than those that are very active.

Table 18: Profit of Traders by Density of Membership

	Average amount(₦/ month)
Density of membership	
1	57,997.61
2	57,901.39
3	8,510.15
4	11,172.11
>4	57,776.77

Source: Field Survey 2011

Table 19: Profit of Traders by Decision making index

	Average amount(₦/ month)
Decision making Index %	
1-20	-
21-40	61,000.00
41-60	21,857.62
61-80	23,047.06
>80	21,953.08

Source: Field Survey 2011

4.7.4 Profit of traders by Meeting Attendance Index

Profit of the grain traders by their meeting attendance index is presented in Table 20. Traders with the sub group greater than 80% made the highest profit of ₦70, 371.48 per month. On the other hand grain traders in sub group 1-20% meeting attendance made profit of ₦22, 140.00 per month. This implies that grain traders with highest percentage of meeting attendance obtained higher profit. Attendance at meetings shows some level of commitment to the association; it therefore implies that the more the traders attend meetings the more profit he/she obtains.

4.7.5 Profit of Traders by Cash Contribution

The measure of profit of traders by cash contribution in their local associations is shown in Table 21. Cash contribution of traders was categorized into five subgroups: ₦ 1 - ₦500; ₦ 501 - ₦ 1000; ₦ 1001 - ₦ 2000; 2001 - ₦ 3000 and greater than ₦ 3000. Traders with cash contribution greater than ₦3000 made the lowest profit of ₦34, 714.00. Traders that contributed lowest amount of money to their associations obtained highest profit of ₦64, 922.46. The implication is that cash contribution alone to association is not a sufficient condition for profit making; it becomes worthwhile when the cash can be translated into direct investment and brings profit or expansion to the business.

Table 20: Profit of Grain Traders by Meeting Attendance Index

	Average amount of profit (₦/ month)
Meeting Attendance Index %	
1-20	22,140.00
21-40	53,997.47
41-60	64,480.30
61-80	68,610.84
>80	70.371.48

Source: Field Survey 2011

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Table 21: Profit of Grain Traders by Cash contribution

	Average amount of profit (₦/month)
Cash contribution (₦)	
1- 500	64,922.46
501-1000	53,799.66
1001-2000	49,849.55
2001-3000	46,005.14
>3000	34,714.00

Source: Field Survey 2011

4.7.6 Profit of Traders by Labor Contribution

Table 22 shows profits of grain traders by labour contribution. Labour contribution of traders was categorized into five subgroups: less than1.0, 1.0 -2.0, 2.1 -3.0, 3.1 – 4.0, > 4.0 man-days. Trader obtained higher level of profit at the lowest subgroup of between less than 1 man-day's labor contributions. This implies that traders that contributed less labour to the association obtained higher profit than those that contributed more labour to their associations. The implication is that the traders that stayed and attended to their customers had more time to build social relations that engendered improved sales and consequently enhanced profit than others that attended to association issues that did not benefit their trading activities.

4.7.7 Profit of Traders by Trust Index

Profit of traders by trust index in their local associations is presented in Table 23. Traders that had the lowest level of trust made highest profit of ₦57, 446.50 while those that had highest level of trust made the lowest profit of ₦40, 340.30. The implication of this is that traders with low trust index obtained more profit than those with high trust index in the study area.

4.7.8 Profit of Traders by Cohesion Index

Profit of traders by cohesion index in their local institutions is presented in Table 24. Cohesion index of the traders was categorized into four subgroups; 0.1 – 1.0; 1.1 – 2.0; 2.1 – 3.0 and >3.0. Traders with lowest cohesion index obtained highest profit of ₦59, 611.01 than traders with higher cohesion index in the study area.

Table 22: Profit of Traders by Labor Contribution

	Average amount of profit (Naira/month)
Labour contribution (Manday)	
< 1.0	63,468.75
1.0-2.0	47,666.05
2.1-3.0	44,121.12
3.1-4.0	41,072.50
> 4.0	38,905.00

Source: Field Survey 2011

Table 23: Profit of Traders by Trust Index

	Average amount of profit (Naira/month)
Trust Index	
0.1- 1.0	57,446.50
1.1 – 2.0	50.466.17
2.1 – 3.0	43.468.00
> 3.0	40.340.30

Source: Field Survey 2011

Table 24: Profit of Traders by Cohesion Index

	Average amount of profit (Naira/month)
Cohesion Index	
0.1- 1.0	59,611.01
1-1 – 2.0	47,675.78
2.1 – 3.0	39,457.98
> 3.0	37,324.56

Source: Field Survey 2011

4.8 Factors Affecting Profitability of Grain Traders

The effect of microcredit and social capital on profitability of grain traders is presented in Table 20. Both multiplicative and additive social capital indices were used to determine the impact of social capital on profitability of grain traders. The use of both multiplicative social capital and additive social capital indices is hinged on the fact that to date, literature on conceptual and theoretical underpinnings of social capital has not proved the superiority of one over the other (Yusuf, 2008; Okunmadewa, *et al* 2010). However, Grootaert *et al* (2002) noted that the two approaches are common in literature. For instance, Narayan and Pinchett (1997) and Grootaert (2001) used the approaches.

In the first column of the table is the basic model of profitability of grain traders. This model shows that about 24.36 percent of the variations in profitability of traders are explained by the specified human capital, credit characteristics and demographic factors. In specific term, increase in time lag significantly reduced the profitability of the grain traders.

In the second column of the table, the multiplicative social capital variable is introduced. The inclusion of this variable led to slight improvement in the adjusted R^2. Along with the demographic variables and credit characteristics, aggregate social capital significantly influenced the profitability of the grain traders. A one unit increase in social capital would increase profitability of grain traders by 12.1 percent.

The third column of Table 24 reveals the inclusion of eight additive social capital variables. These are trust index, cohesion index, density index, decision making index, cash contribution, labour contribution, meeting attendance index and heterogeneity index. This new model has a better explanatory power as reflected in the adjusted R^2 of 0.2745.

Only 7 of independent variables have significant effect on traders' profitability. These are primary occupation (X_6), time lag (X_8), social cohesion index (X_{12}), density of membership (X_{13}), decision making index (X_{14}), cash contribution (X_{15}) and labour contribution (X_{16}). The positive coefficient of primary occupation indicates that the more the traders' involvement in grain trading as their primary occupation, the more the profit that accrue to them. Traders that have grains as their major occupation had his/her profit increased by 9.1%.

Availability and proper usage of credit has been empirically proved to enhance productivity level of rural households in Nigeria (Okoruwa and Oni, 2002). Time lag between demand for and accessibility of credit decreases the likelihood of making profit by 1.8%. The reason is because of importance of timely delivery of credit to traders and other business operators. The problem of long time lag makes it difficult for traders to take full advantage of their trading opportunities.

Cohesion index indicated that the more cohesive the traders are in their local level institutions, the more their profit would increase. An increase of 100% in social cohesion of grain traders in their association increased profitability by 61.9%. In the same vein, density of membership increased profit of the traders. Density of membership of the traders in local level institution showed that as grain traders participate in more association, profitability of traders increased by 0.1%. On the other hand, participation in decision making decreased the profitability. This could be as result of distractions or not having time by the trader to stay and sell his/her grains because of associational matters that may require attention.

The positive coefficients of cash contribution and labour contribution indicated that a unit increase in each of them would increase the profit of traders. In the case of cash contribution, an increase of 100% resulted into 0.3% profit for the grain traders in the study area. The implication is that, traders that contribute more to associations are more recognised than others to access credit from the associations because, his/her contributions are sometimes used as social collateral for loans. In a situation where the credit is ploughed or invested into the business or income generating activity, more profit is expected. The result supports Ajani and Tijani (2009) and Balogun (2011) that cash contribution by household members into their association is a sign of commitment and also served as a source of social collateral in credit market. Labour contribution increased the probability of grain traders' profit by 0.4%.

This disaggregation shows that the effects of social capital on profitability of grain traders are traceable to cohesion index, membership density index, decision making index, cash contribution and labour contribution. Improvement in cohesion index significantly increases the profitability of the grain traders. Also, additional membership of traders in associations leads to improved profitability. However, active participation in decision making actually reduced profitability. Thus, high level of commitment to associations can reduce profitability.

Table 25: Factors affecting profitability of Grain traders

	Basic model			**Multiplicative social capital**			**Additive social capital**		
Variable	Coefficient	dy/dx	T-value	Coefficient	dy/dx	T-value	Coefficient	dy/dx	T-value
Sex	0.0415	0.0415	1.26	0.0546	0.0546	1.75*	0.3786	0.03786	1.33
Age	0.005	0.0005	0.26	0.0006	0.0006	0.32	0.0000	0.0000	0.01
M astatus	-0.0217	-0.0217	-0.86	-0.0340	-0.0340	-1.42	-0.0262	-0.0262	-1.19
Hhsize	0.0042	0.0042	0.73	0.0017	0.0017	0.31	0.0026	0.0026	0.52
Yrsch	-0.0032	-0.0032	-0.77	-0.0026	-0.0026	-0.68	-0.0049	-0.0049	-1.37
Pryoccpat	0.0682	0.0682	1.21	0.0582	0.0582	1.10	0.0909	0.0909	1.87*
Incharge	0.0071	0.0071	1.71	0.0059	0.0059	1.50	0.0056	0.0056	1.51
Timlag	-0.0235	-0.0235	-2.16**	-0.0223	-0.0223	-2.17**	-0.0175	-0.0175	-1.87*
Credistance	0.0111	0.0111	1.41	0.0237	0.0237	1.58	0.0146	0.0146	1.07
Paybkperiod	0.0003	0.0003	0.07	0.0007	0.0007	0.20	0.0021	0.0021	0.66
SC				0.1211	0.1211	7.70***			
Trustindex							-0.0063	-0.0064	-0.27
Coheindex							0.0619	0.0619	2.21**
Densindex							0.0013	0.0013	7.74***
Decindex							-0.0032	-0.0032	-3.46***
Cashcontr							0.0033	0.0033	4.72***
Laborcontr							0.0037	0.0038	7.26***
Meetindex							-0.0005	-0.0005	-0.63
Heterindex							-0.0036	-0.0036	-1.49
Observation	492			492			492		
F-statistics	14.21			11.62			10.80		
Adj R^2	0.2436			0.2681			0.2745		

Asterisks denote significance***, **,* at 1%, 5%, 10% significance levels.
Source: Field Survey 2011

4.9 Social Capital and Profit: Any Reverse Relationship?

In the earlier analysis social capital has been treated as exogenous variable. However, membership in social groups is at a cost i.e. time and other resources. It therefore becomes imperative to isolate the exogenous impact of social capital on profit. In order to validate the assumption of social capital being truly capital, the study tested the existence of bicausality between social capital and profit. The extent of two-way causality is empirically testable by means of instrumental variable estimation. The real challenge is to find a suitable instrument set for social capital: instrument must determine social capital but not traders' profitability (nor be determined by traders' profitability).

Table 26 presents the result of two-way causal relationship between social capital and profit of grain traders. The result depicts that the use of instrumental variable led to an increase in the value of the explanatory power of the model (i.e. adjusted R^2) from 0.2681 to 0.2702 compared with the use of actual social capital index. In addition, the instrumental variable method leads to higher coefficient for the social capital index than in the OLS method. This indicates that social capital is an exogenous determinant of traders' profitability. A reverse causality could have been inferred if there is no improvement or reduction in the instrumental variable. Since, there is improvement on both counts, one can infer the absence of significant reverse causality and thus confirms the exogeneity of social capital. A one unit increase in the level of instrumented social capital leads to 0.368 percent increase in profit of grain traders. The finding of exogeneity of the social capital index was also reported by Narayan and Pritchett (1997) for Tanzania and Akinyemi *et al* 2012 for grain sellers in Ibadan, Nigeria. This finding strengthens the case for viewing social capital as an input in the grain traders' marketing activities. This in turn opens up the case for investing in social capital, just as investments are made in human capital. However, there is a critical difference: education is embodied in one individual and can be acquired by one individual regardless of what other people do. By definition, social capital can only be acquired by a group of people and requires a form of cooperation among them (although, as our results have shown, the extent to which different members of a group capture the benefits does depend upon their individual actions, especially the extent of active participation). This gives social capital an inevitable public good character and this has implications for its production (Coleman, 1988, 1990).

Table 26: Social Capital: Instrumental Variable Estimation

	Without instrumental variable (OLS)			With instrumental variable (2SLS)		
Variable	Coefficient	Standard Error	t-value	Coefficient	Standard Error	t-value
Sex	0.0546	0.0311	1.75*	0.4123	0.1052	2.17**
Age	0.0006	0.0017	0.32	0.0239	0.1900	1.56
Maristat	-0.0340	0.0240	-1.42	0.2020	0.1759	1.15
Hhsize	0.0017	0.0054	0.31	-0.1296	-0.1651	-0.79
Yrsch	-0.0026	0.0039	-0.68	0.0787	0.1526	0.52
Pryoccpat	0.0582	0.0530	1.10	0.2258	0.4961	0.46
Incharge	0.0059	0.0039	1.50	0.0103	0.0317	0.32
Timlag	-0.0223	0.0103	-2.17**	-0.0143	0.0032	-4.44***
Credistance	0.0237	0.0149	1.58	0.0249	0.1609	0.15
Paybkperiod	0.0007	0.0035	0.20	0.0412	0.0352	1.17
SC	0.1211	0.0157	7.70***	0.3683	0.0433	8.50***
No of observation	492			492		
Adj R^2	0.2681			0.2702		

Asterisks denote significance***, **,* at 1%, 5%, 10% significance levels.
Source: Field survey 2011

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The study examined the effects of social capital and access to microcredit on profitability of grain traders in Southwestern, Nigeria. To achieve this aim, a multistage sampling was employed for selection of states, local government areas, types of market and grain traders. Data on socio-economic characteristics, membership of association, participation in the local level institution activities, microcredit activities and costs and returns were collected with structured questionnaires. The data were analyzed using descriptive statistics, multinomial logit, budgetary analysis, ordinary least square and 2-Stage Least Square regression models.

5.1 Summary of Major Findings

Different types of social capital dimensions existed among grain traders in the study area. Grain traders in the study area belonged to various associations from which they obtained their social capital. Grain traders in the study area belonged to more than two associations. The most prominent association is Traders' association representing about 26.9% of population of traders. Grain traders have an average of three associational memberships and participated in three of five decision making. Membership of the association was diversified with heterogeneity index of 70.0%. The greatest diversity was found among the traders that sourced their credit from community association. Grain traders attended four out of five scheduled meetings per month.

Different sources of credit that were available to grain traders in the study area include traders association, community associations, cooperative, ROSCAS, microfinance banks and friends and relatives. Majority of the grain traders accessed credit from traders' association. Grain traders travelled an average of 1.23 kilometers to get to the financial institutions for credit. The farthest credit source to traders was community association. Microfinance banks and cooperative societies were nearer sources of credit to the traders. The borrowed credit was expected to be paid by traders in 6.5 months. Payback period was highest for traders that sourced credit from community association while the least was from those that patronized microfinance banks. The time lag for loan was about 2.13 weeks. The decreasing order of time lag of credit for traders in the area of study was 3.82, 3.76, 3.74, 3.38, 3.15weeks for ROSCAS, microfinance,

cooperative association, friends and relatives, traders association and community association respectively. The largest amount of credit was requested from microfinance bank while the least was from friends and relatives. An average of ₦145, 489.30 was requested as loan by the grain traders while only ₦67480.13 was approved by the credit institutions. The shortfall in credit demand showed a credit gap (Granted/Requested) ratio of 0.46. Following from this, credit demanded was not commensurate with credit supplied as only about half of the traders had access to credit.

Profitability of grain trading in the study area was determined. The mean monthly revenue of the traders was ₦496, 135.0 while the gross margin was ₦12, 359.0. The benefit cost and operating expense ratios were 1.03 and 8.71 respectively while return per naira invested and labour efficiency were 0.0255 and 57.16 respectively. Also the profitability index of the grain traders was 0.0249 indicating that the traders earned about 2.50kobo on each naira invested in trading. These measures of performance indicate that grain trading in the study area is viable and profitable. The most important operating cost of the grain traders was cost of transport.

In the case of the factors affecting accessibility to microcredit among the grain traders, social capital variables (Trust index, decision making index, labour contribution, meeting attendance index and heterogeneity index) and credit variables (interest rate charged, credit distance and payback period) were important variables in accessing credit. A unit increase in trust index will lead to an increase in odds of traders accessing credit from ROSCAS. Also as percentage participation in decision making of grain traders increased, the probability of their access to credit from microfinance banks also increased. An increase in labour contribution increased the likelihood of grain traders accessing credit from traders' association and decreased credit access from ROSCAS and relatives and friends respectively. As the percentage of scheduled meetings attended by the grain traders increased, their probability of access to credit from microfinance banks also increased. In the same vein an increase in heterogeneity index of grain traders increased the odds of accessing credit from ROSCAS.

In addition, as interest charged on credit increased, access to credit decreased by 86.5% and 38.1% in traders' association and relatives and friends respectively. On the other hand, the odds ratio of credit access from traders' association and ROSCAS increased the farther the traders dwelling places are. Payback period decreased credit access by 84.5% in traders'

association, 76.5% in ROSCAS, 61.5% and 66.7% in relatives and friends and microfinance banks respectively.

Grain trading as major occupation increased the profit of the traders by 9.1% whereas credit time lag decreased the traders profit by 1.8%. On the contrary, cohesion index indicated that the more cohesive the traders were in their local level institution, the more their profit would increase. An increase of 100% in social cohesion of grain traders in their association increased profitability by 6.2%. In the same vein, the positive coefficient of membership density would increase profit of the traders. Density of membership of the traders in local level institution showed that as member in association increased, profit of traders increased by 0.1%. On the other hand, participation in decision making decreased the likelihood of making profit. This could be as result of distractions or not having time by the trader to stay and sell his/her goods because of associations matters that required attention.

In determining the effects of microcredit on profitability of the grain traders; rice and beans traders that sourced credit from community association recorded the highest profit. The lowest profit was recorded for traders that sourced credit from friends and relatives. Maize/sorghum/millet traders that sourced credit from traders' association recorded the highest profit while traders that sourced credit from ROSCAS recorded the lowest profit.

In examining the relationship between social capital and profitability of grain traders; improvement in cohesion index significantly increased the profitability of the grain traders. Also, additional membership of traders in associations led to improved profit. However, active participation in decision making reduced profit. A one unit increase in active participation in decision making would lead to 0.32 percent decline in profit.

The test of reverse causality between social capital and profitability of grain traders with the aid of instrumental variable estimation led to an improvement in the value of the explanatory power of the model. This indicates that the direct effect of social capital on profitability outweighs the reverse effect in the explanation of the correlation between the two variables. This therefore implies that social capital is an exogenous determinant of traders' profitability.

5.2 Conclusion of the Study

The justification of this study is based on effects of social capital and access to microcredit on profitability of grain traders in Southwest Nigeria. Based on the empirical evidence emanating from both descriptive and inferential statistics employed for this study, it could be concluded that social capital is a profitability enhancing variable. Findings emanating from this study show that both formal and informal credits coexist among grain traders. Only about half of the traders had access to credit; credit demanded was not commensurate with credit supplied. Also, traders' decisions on whether to access credit are mainly determined by social capital variables (Trust index, decision making index, labour contribution, meeting attendance index and heterogeneity index) and credit variables (interest rate charged, credit distance and payback period). It is however, evident from the result of multinomial logit that traders were eager to source credit from most of the credit sources regardless of the credit distance thereby explaining the importance of credit for enterprises development among the traders. Improvement in cohesion index, additional membership of traders in associations and an increase in cash contribution of the traders significantly increased the profitability of the grain traders. Social capital increased access to, and the amount of credit available from different sources.

5.3 Policy Implications and Recommendations

Based on the findings of this study and conclusions drawn, a number of policy implications and recommendations are made towards ensuring grain traders' profitability through social capital and microcredit in southwestern states, Nigeria. The most substantive include the following:

- Most of the traders in the study area belonged to more than two associations. Grain traders joined local level institutions because of the benefit inherent in them. Given the heavy contributions and level of participation of members in group activities because of economic gains and spiritual benefits, people are always willing to join the groups. It is recommended that traders should join associations because of various benefits inherent in them and also it is through associations that credit programmes of government could be channeled to the people. Existing microcredit organizations need to be strengthened in order to improve their efficiency and consequently enhance grain traders' performance.
- The study found that access to credit has the potential for enhancing profitability. Our analysis suggests that policy makers interested in improving the profitability of traders

may be advised to consider credit delivery and unrestricted access as one of the ways of channeling credit to grain traders.

- Social capital significantly influenced the amount of credit available from different sources. Our analysis suggests that policy makers interested in addressing credit accessibility of traders in Nigeria should consider not only the existing social capital but also the social structure of the society. This approach will perhaps bring improvement on the implementation of formal credit program as a profitability enhancing program among the traders.

5.4 Contributions to Knowledge

This study has contributed to the growing literature on the effects of social capital and microcredit on profitability of grain traders with particular reference to southwest Nigeria in the following areas:

- Social capital is an important variable in sourcing for credit: The study shows that social capital significantly influenced the amount of credit available from traders association, community associations, cooperative society, ROSCAS, microfinance banks and friends and relatives.
- Access to microcredit improved profitability of grain traders. However, the study finds that grain traders were only able to obtain less than half of their total credit needs. An increase in time lag for credit increased credit access in traders' association, cooperative, ROSCAS, friends and relatives and microfinance banks.
- Social capital is an exogenous determinant of traders' profitability. Key elements of social capital that affects profitability include social cohesion, membership density and active participation in decision making. An improvement in social cohesion of grain traders in their associations increased profitability. Also increase in density of membership of the traders in local level institution increased profitability of traders. However, active participation in decision making process reduced profitability.
- The study shows that grain traders sourcing credit from traders associations recorded the highest profit followed by traders sourcing credit from ROSCAS and banks respectively. The lowest profit was recorded for traders sourcing credit from friends and relatives. .

5.5 Suggestions for Further Study

This study is limited by its inability to cover all the geopolitical zones of Nigeria. Therefore, future research should examine all the zones to see social capital and microcredit effects on profitability of grain traders so as to see the variation that exist among the zones.

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Appendix i

Department of Agricultural Economics
University of Ibadan

Questionnaire on Effects of Social Capital and Microcredit on Profitability of Grain Traders in Southwestern state Nigeria.

We are currently carrying out a study on the above topic. Kindly assist in responding to the questions below. The information that would be supplied is strictly for research purpose. Thank you for your anticipated cooperation.

Section A: Background information on Grain traders.

1 Date of interview ----------

2 Name of market ---------- 3 LGA ----------

B: Demographic characteristics of grain traders.

NO	Socio-economic characteristics	Responses	Codes for options
1	Sex		1= male,0= female
2	Age (year)		
3	Marital status		1=married,2=single 3=widowed,4=divorced
4	Family type, if married		1=monogamous 0=polygamous
5	Household size		
6	Number of male Number of female 0-4 years 5-14 15-64 65 and above		Actual number
7	Number of years spent in school		
8	Highest educational qualification attained		0=No formal 1=Primary 2=Secondary 3=tertiary 4=Islamic education
9	Religion		1=Christianity 2=Islamic 3=Traditional Others, specify…….

10 Tick the enterprise(s) you engage in from the list below:

S/N	Grain trading	
1.	Rice	
2.	Beans	
3.	Maize	
4.	Sorghum	
5.	Millet	

11. Are you a wholesaler [ ] or retailer [ ] both [ ]

12. What is your major occupation? Trading [ ] Civil servant [ ] Crafts/Artisans [ ] Farming [ ] others, specify

13. If trading, how long have you been trading? ----------

14. Are you a full time trader [ ] or Part time [ ]

15. Do you have another business? Yes [ ] No [ ]

16. What are the major sources of microcredit available for your business?

Traders' association [ ] Community association [ ] Cooperative society [ ] ROSCAS [ ] Relatives/Friends [ ] Money lenders [ ] Personal savings [ ] Microfinance Banks [ ] others, specify ……

17. Rank the sources of credit in order of importance to you;

1st……2nd……3rd……4th……
….5th…… 6th……...7th……..

18. How often do you go to the market to buy the products?

Every 5-day [ ] Every 3-day [ ] Weekly [ ] Monthly [ ] others, ---------- specify……

19. Which market do you purchase your products?

……

20. What is the quantity of the product(s) you often purchase?

≤ 1 bag [ ] 1-5 bags [ ] 6-10 bags [ ] 11-20 bags [ ] 21-30 bags [ ] 31-40 bags [ ] 41-50bags [ ] 51-100bags[ ] 100-200 bags [ ] 201-300 bags [ ]301-400 bags [ ] 401-500 bags [ ] 501-600bags [ ] above 600 bags [ ]

21. How long does it take you to sell products?

≤1wk [ ] 1-2wks [ ] 3-4 wks [ ] above 1 month [ ]

22. What is the method of purchase?

Cash and carry [ ] Part payment [ ] purchase on credit [ ] others, specify……

23. How much do you realize from the sales of the following:

S/N	Grain	Price/unit Kongo/bag	Quantity sold/month Kongo/bag	Amount earned/month (N)
1.	Rice			
2.	Beans			
3.	Maize			
4	Sorghum			

5	Millet			

24. Labour employment

Item	No of Family Labour	Amount paid/month (N)	No of apprentice	Amount paid/month (N)	No of paid labour	Amount paid/month (N)	Total amount paid for labour (N)	% of family labour in total labour force
Rice								
Beans								
Maize								
Sorghum								
Millet								

25. How much do you incur on the following per month;

S/N	Grain Kongo/bag	Price purchased/kongo/bag	Storage cost (N)	Transportation cost (N)	Labour cost (N)
1.	Rice				
2.	Beans				
3.	Maize				
4.	Sorghum				
5.	Millet				

C Social capital and sources of credit

1. Type of Association/Organization of grain traders

Please tick as many as applicable for each grain trader that is involved in the local level institutions.

Association/Organization	Grain traders
1. Traders' association/business group	
2. Cooperative societies	
3. Credit/Finance group (formal)	
4. Religious group	
5. Cultural Association	
6. Gender Association	
7. Political group	

8. NGOS
9. Trade Union
10. Recreational group
11. Age group
12. Social service group
13. Others, specify…….

2. Please, list the three (3) most important associations you belong to (a)……. (b)…….. (c)…….

3. On the basis of the above, please use the table below to provide information on the most important association you belong;

	Association 1	Association 2	Association 3
Do all members of the association live within the same area? Yes/No			
Do all members belong to the same Clan/Family/Lineage? Yes/No			
Do member belong to the same income group? Yes/No			
Are you of the same religion? Yes/No			
Are members of the same sex? Yes/No			
Do members belong to the same age group? Yes/No			
Are the members of the same educational qualification? Yes/No			
Do members have the same belief and cultural practice? Yes/No			

4. Please, complete the table below to show the number of meetings of each association per month and the number of times each grain trader attended meeting per month.

S/N	Association/Organization	Number of times
		Actual number of meeting/month
1.	Trader's association/business group	
2.	Cooperative Societies	
3.	Credit /Finance group (formal)	
4.	Religious group	
5.	Cultural Association	
6.	Gender Association	
7.	Political group	
8.	NGOS	
9.	Trade union	
10.	Recreational group	

11.	Age group	
12	Others, specify	

5. Please, identify the nature of conditions imposed by group relevant to the smooth operation of association.

Registration ……

Compliance to rules and regulation……..

Attendance of meeting……..

Payment of dues…….

Imposition of penalties on erring members……

Others, specify----------

How much do you contribute as due? How often ----------

6. What are the benefits derived for being a member of the group? State the benefits;

……

……

……

……

……

7. Please, complete the table below to show the number of meetings of each of the association per month and the number of times you attended in the past one month

Associations	Actual No of meetings per month	Number of times you attended per month
1		
2		
3		

8. Please, indicate how you will rate your participation in decision making in the three most important associations you belong. Please, mark the appropriate cell

Association	Very active	Active	Passive	Very passive	Non participation
1					
2					
3					

9. Please, indicate your monthly contribution to the respective associations.

Association	Cash (dues)	Contribution	Contribution toward upliftment of the association
1			
2			

3			

10 Standard Generalized Trust

Please, indicate whether in general you agree or disagree with the following statements:

Item	Strongly Agree	Agree	Disagree	Strongly Disagree
Most people in this market are always more trustworthy than others				
Most people in this market are basically honest and can be trusted				
In this market one has to be alert of someone who is likely to take advantage of you				
People in this market are always interested only in their own welfare				
If you have a problem there is always someone to help				
You do not pay attention to the opinion of others				
You feel accepted as a trader in this market				
People generally trust each other in matter of lending and borrowing				

11 Consider the circle of the m=20 people (outside close family) you know best, How many in this circle would you trust (or would you not trust) with a personal loan amounting to n=5% of your income? …….

12. **Networks**

Suppose you suffered an economic loss; who do you think would assist you financially in that situation?

Assistance indicator: Very High =4; High =3; Low=2; Very Low=1.

1. No one would help
2. Family
3. Neighbors
4. Friends
5. Religious leader or group
6. Community leader
7. Business leader
8. Political leader
9. Mutual support group to which you belong.
10. Assistance group to which you belong

13 Give information on the credit received from any of the sources in the last one year as depicted below;

Source of credit	Amount requested from credit source (N)	Amount granted (N)	Interest charge %(if any)	Time lag between request and granting of loan (wk)	Uses of the credit	Amount paid back	Amount outstanding	Form of collateral used

14. How many times have you applied for microcredit in a year? ……..

15. What is the mode of loan repayment? Weekly [ ] Monthly [ ] Annually [ ]

16. Amount paid for penalty on loan repayment lateness in Naira……..

17. What are your sources of loan repayment? Savings [ ] other earnings [ ] Borrowing [ ] wage Earnings of the borrowers [ ] others, specify……

Section D: **Constraints Associated with Credit Procurement.**

1. Have you ever been turned down in procuring credit? Yes [ ] No[ ]
2. Give information on constraints experienced in credit procurement:

……
……
……
……

How would you rate the performance of sources patronized for credit?

Performances indicator; very **High=5, High=4, Moderate=3, Low=2, Very low=1**

Sources	Performances indicator; Very High=5, High=4, Moderate=3, Low=2, Very low=1		
	Volume of credit	Prompt Delivery	Affordable interest rate

3. Give other suggestions to government or stakeholders on credit delivery

……
……
……
……
……
……
……

Appendix ii

Multinomial logistic regression

Multinomial logistic regression Number of obs = 273
LR chi2(72) = 263.46
Prob > chi2 = 0.0000
Log likelihood = -130.58446 Pseudo R2 = 0.5022

sofcredt	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1						
densityindx	-.0116078	.0099542	-1.17	0.244	-.0311177	.0079022
decindex	-.0020573	.0188671	-0.11	0.913	-.0390361	.0349215
cashindex	-.0250841	.0159619	-1.57	0.116	-.0563689	.0062007
laborindex	.0191257	.0089936	2.13	0.033	.0014985	.0367529
meetgindx	-.0112906	.0164827	-0.68	0.493	-.043596	.0210149
heterindex	-.007463	.0437198	-0.17	0.864	-.0931521	.0782262
sex	.4605082	.5114314	0.90	0.368	-.541879	1.462895
age	.0202014	.0294711	0.69	0.493	-.0375609	.0779638
mstat	.1500067	.4655605	0.32	0.747	-.762475	1.062488
hhsize	.114906	.0966689	1.19	0.235	-.0745616	.3043736
yrssch	.0542292	.0671665	0.81	0.419	-.0774147	.185873
incharge	-.1457916	.0606371	-2.40	0.016	-.264638	-.0269451
timlag	-.2922271	.2220611	-1.32	0.188	-.7274589	.1430047
trustindex	-.2544073	.4737766	-0.54	0.591	-1.182992	.6741777
cohensioni~x	-.369751	.5410739	-0.68	0.494	-1.430236	.6907344
credistance	.2828027	.1004902	2.81	0.005	.0858456	.4797599
paybkper	-.1679343	.080141	-2.10	0.036	-.3250077	-.0108609
pryoccpat	-.7644016	.650733	-1.17	0.240	-2.039815	.5110116
_cons	1.410959	3.90057	0.36	0.718	-6.234018	9.055935
4						
densityindx	-.0352051	.0319662	-1.10	0.271	-.0978577	.0274476
decindex	-.0592835	.0380775	-1.56	0.119	-.1339141	.015347
cashindex	-.0057378	.0281707	-0.20	0.839	-.0609513	.0494758
laborindex	-.2856922	.1251179	-2.28	0.022	-.5309188	-.0404656
meetgindx	.032458	.0367535	0.88	0.377	-.0395774	.1044935
heterindex	.1648626	.0979524	1.68	0.092	-.0271205	.3568458
sex	-.5071611	1.245921	-0.41	0.684	-2.949121	1.934798
age	-.2264082	.0989524	-2.29	0.022	-.4203514	-.0324651
mstat	.9664633	.8861159	1.09	0.275	-.770292	2.703219
hhsize	.235603	.177107	1.33	0.183	-.1115203	.5827263
yrssch	-.1115249	.2041509	-0.55	0.585	-.5116534	.2886036
incharge	-.2406691	.1474331	-1.63	0.103	-.5296326	.0482945
timlag	.4012946	.5341528	0.75	0.452	-.6456258	1.448215
trustindex	2.963712	1.153886	2.57	0.010	.702138	5.225286
cohensioni~x	-2.055554	1.38176	-1.49	0.137	-4.763754	.6526465
credistance	.6519659	.3376395	1.93	0.053	-.0097954	1.313727
paybkper	-.2683859	.1514233	-1.77	0.076	-.56517	.0283983
pryoccpat	26.93933	8.930243	3.02	0.003	9.436371	44.44228
_cons	-28.31427	.	.	.	.	.
5						
densityindx	-.0206802	.0310044	-0.67	0.505	-.0814478	.0400874
decindex	.00367	.0541532	0.07	0.946	-.1024682	.1098083
cashindex	-.0059707	.0314233	-0.19	0.849	-.0675591	.0556178
laborindex	-.0650073	.0355132	-1.83	0.067	-.1346119	.0045972
meetgindx	.0798163	.0494881	1.61	0.107	-.0171787	.1768112
heterindex	.0376642	.1387141	0.27	0.786	-.2342103	.3095388

```
        sex |   1.836964    1.60734     1.14   0.253    -1.313366    4.987293
        age |  -.0123544   .0786516    -0.16   0.875    -.1665087    .1417998
      mstat |   .0345264   1.292907     0.03   0.979    -2.499525    2.568578
     hhsize |   .3470166   .2592212     1.34   0.181    -.1610476    .8550807
     yrssch |   .0329671   .1980826     0.17   0.868    -.3552678    .4212019
    incharge |  -.9645205   .2853644    -3.38   0.001    -1.523824   -.4052165
     timlag |   .2061094   .5634096     0.37   0.714    -.8981531    1.310372
  trustindex |  -1.748878   1.632783    -1.07   0.284    -4.949073    1.451317
cohensioni~x |  -.4590477   1.414659    -0.32   0.746    -3.231728    2.313633
 credistance |    .070554    .313225     0.23   0.822    -.5433558    .6844638
    paybkper |  -.4858836   .2478744    -1.96   0.050    -.9717084   -.0000587
   pryoccpat |   19.87938    12.5536     1.58   0.113    -4.725231    44.48399
       _cons |  -22.75029          .        .       .           .           .
-------------+----------------------------------------------------------------
7            |
 densityindx |  -.0042391   .0038061    -1.11   0.265    -.0116989    .0032207
    decindex |   .0483053   .0243914     1.98   0.048     .0004989    .0961116
   cashindex |   .0284013    .01797     1.58   0.114    -.0068192    .0636218
  laborindex |  -.0277857   .0183272    -1.52   0.129    -.0637065     .008135
   meetgindx |   .0420038   .0218864     1.92   0.055    -.0008927    .0849003
  heterindex |  -.0439797    .072978    -0.60   0.547    -.1870139    .0990545
        sex |   3.277877   .8863958     3.70   0.000     1.540573    5.015181
        age |   .0860477   .0577391     1.49   0.136    -.0271188    .1992142
      mstat |  -19.05194   5.584206    -3.41   0.001    -29.99678    -8.1071
     hhsize |  -.0062788   .1406792    -0.04   0.964    -.2820049    .2694473
     yrssch |   .0567891   .1100158     0.52   0.606    -.158838    .2724162
    incharge |  -.0602538   .0944362    -0.64   0.523    -.2453454    .1248378
     timlag |  -.0929224   .3194547    -0.29   0.771    -.7190422    .5331973
  trustindex |  -.1554972   .6558479    -0.24   0.813    -1.440935    1.129941
cohensioni~x |   .6760164   .7868169     0.86   0.390    -.8661163    2.218149
 credistance |  -.4885878   .2955353    -1.65   0.098    -1.067826    .0906509
    paybkper |  -.4057203   .1412419    -2.87   0.004    -.6825493   -.1288913
   pryoccpat |   20.61298          .        .       .           .           .
       _cons |  -9.588601          .        .       .           .           .
------------------------------------------------------------------------------
(sofcredt==3 is the base outcome)


Multinomial logistic regression                 Number of obs   =        273
                                                LR chi2(72)     =     263.46
                                                Prob > chi2     =     0.0000
Log likelihood = -130.58446                     Pseudo R2       =     0.5022

------------------------------------------------------------------------------
    sofcredt |        RRR   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
1            |
 densityindx |   .9884593   .0098393    -1.17   0.244     .9693615    1.007933
    decindex |   .9979448   .0188283    -0.11   0.913      .961716    1.035538
   cashindex |   .9752279   .0155665    -1.57   0.116     .9451904     1.00622
  laborindex |    1.01931   .0091673     2.13   0.033       1.0015    1.037437
   meetgindx |   .9887729   .0162976    -0.68   0.493     .9573406    1.021237
  heterindex |   .9925648   .0433947    -0.17   0.864     .9110549    1.081367
        sex |   1.584879    .810557     0.90   0.368     .5816543    4.318445
        age |   1.020407   .0300726     0.69   0.493     .9631357    1.081084
      mstat |   1.161842   .5409077     0.32   0.747     .4665104    2.893562
     hhsize |   1.121768   .1084401     1.19   0.235     .9281503    1.355775
     yrssch |   1.055727   .0709094     0.81   0.419      .925506    1.204269
    incharge |   .8643379   .0524109    -2.40   0.016     .7674837    .9734147
     timlag |    .746599   .1657906    -1.32   0.188     .4831351    1.153735
  trustindex |   .7753759    .367355    -0.54   0.591     .3063607    1.962419
```

```
cohensioni~x |   .6909064   .3738314    -0.68   0.494     .2392524     1.99518
 credistance |   1.326843   .1333347     2.81   0.005     1.089638    1.615686
    paybkper |   .8454094   .0677519    -2.10   0.036     .7225218    .9891979
   pryoccpat |   .4656125   .3029894    -1.17   0.240     .1300528    1.666977
-------------+----------------------------------------------------------------
4            |
 densityindx |   .9654074   .0308604    -1.10   0.271     .9067779    1.027828
    decindex |   .9424395   .0358857    -1.56   0.119     .8746652    1.015465
   cashindex |   .9942787   .0280095    -0.20   0.839      .940869     1.05072
  laborindex |   .7514939   .0940253    -2.28   0.022     .5880644    .9603422
   meetgindx |    1.032991    .037966     0.88   0.377     .9611955    1.110148
  heterindex |   1.179231   .1155085     1.68   0.092     .9732439    1.428816
         sex |   .6022028   .7502968    -0.41   0.684     .0523858    6.922649
         age |   .7973925   .0789039    -2.29   0.022     .6568159    .9680563
       mstat |   2.628631   2.329272     1.09   0.275     .4628779     14.9277
      hhsize |   1.265672   .2241593     1.33   0.183     .8944732    1.790914
      yrssch |   .8944691   .1826067    -0.55   0.585     .5995035    1.334563
    incharge |   .7861017   .1158974    -1.63   0.103     .5888213     1.04948
     timlag |   1.493757   .7978947     0.75   0.452     .5243343    4.255511
  trustindex |   19.36974   22.35047     2.57   0.010     2.018063    185.9144
cohensioni~x |   .1280219   .1768956    -1.49   0.137     .0085335    1.920617
 credistance |    1.91931    .648035     1.93   0.053     .9902524    3.720013
    paybkper |   .7646127   .1157801    -1.77   0.076     .5682635    1.028805
   pryoccpat |   5.01e+11   4.47e+12     3.02   0.003     12536.14    2.00e+19
-------------+----------------------------------------------------------------
5            |
 densityindx |   .9795322   .0303698    -0.67   0.505     .9217808    1.040902
    decindex |   1.003677   .0543523     0.07   0.946     .9026068    1.116064
   cashindex |   .9940471   .0312362    -0.19   0.849     .9346725    1.057193
  laborindex |   .9370606    .033278    -1.83   0.067     .8740551    1.004608
   meetgindx |   1.083088     .0536     1.61   0.107      .982968    1.193406
  heterindex |   1.038383   .1440382     0.27   0.786     .7911954    1.362796
         sex |   6.277448     10.09     1.14   0.253     .2689134    146.5392
         age |   .9877216   .0776858    -0.16   0.875     .8466155    1.152346
       mstat |   1.035129   1.338326     0.03   0.979      .082124    13.04726
      hhsize |    1.41484   .3667565     1.34   0.181     .8512515    2.351564
      yrssch |   1.033517   .2047217     0.17   0.868     .7009857    1.523792
    incharge |   .3811659   .1087712    -3.38   0.001      .217877    .6668324
     timlag |   1.228888   .6923672     0.37   0.714     .4073212    3.707553
  trustindex |    .173969   .2840536    -1.07   0.284      .00709    4.268733
cohensioni~x |   .6318851    .893902    -0.32   0.746     .0394892    10.11109
 credistance |   1.073103   .3361226     0.23   0.822     .5807959    1.982708
    paybkper |   .6151534   .1524808    -1.96   0.050      .378436    .9999413
   pryoccpat |   4.30e+08   5.40e+09     1.58   0.113     .0088687    2.09e+19
-------------+----------------------------------------------------------------
7            |
 densityindx |   .9957699    .00379    -1.11   0.265     .9883693    1.003226
    decindex |   1.049491   .0255986     1.98   0.048     1.000499    1.100882
   cashindex |   1.028808   .0184877     1.58   0.114      .993204    1.065689
  laborindex |   .9725967    .017825    -1.52   0.129     .9382804    1.008168
   meetgindx |   1.042898   .0228253     1.92   0.055     .9991077    1.088609
  heterindex |   .9569734    .069838    -0.60   0.547     .8294322    1.104126
         sex |   26.51941    23.5067     3.70   0.000     4.667265    150.6834
         age |   1.089858   .0629274     1.49   0.136     .9732456    1.220443
       mstat |   5.32e-09   2.97e-08    -3.41   0.001     9.39e-14    .0003014
      hhsize |   .9937408   .1397986    -0.04   0.964      .75427    1.309241
      yrssch |   1.058433   .1164443     0.52   0.606     .8531346    1.313133
    incharge |   .9415255   .0889141    -0.64   0.523     .7824342    1.132965
     timlag |   .9112642   .2911077    -0.29   0.771     .4872187    1.704373
  trustindex |   .8559895   .5613989    -0.24   0.813     .2367062    3.095474
cohensioni~x |    1.96603   1.546906     0.86   0.390     .4205818    9.190305
 credistance |   .6134922   .1813086    -1.65   0.098     .3437549    1.094887
```

```
    paybkper |   .6664966   .0941372    -2.87   0.004     .5053271    .8790695
   pryoccpat |   8.96e+08          .       .       .           .           .
------------------------------------------------------------------------------
(sofcredt==3 is the base outcome)

.

      Source |       SS       df       MS              Number of obs =     492
-------------+------------------------------           F( 18,   473) =   10.80
       Model |  15.9800421    18  .887780114           Prob > F      =  0.0000
    Residual |  38.8887813   473  .082217297           R-squared     =  0.3112
-------------+------------------------------           Adj R-squared =  0.2745
       Total |  54.8688233   491  .111749131           Root MSE      =  .28674

------------------------------------------------------------------------------
logprofitper |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |   .0378587   .0285527     1.33   0.186    -.0182472    .0939646
         age |   .0000189   .0015909     0.01   0.991    -.0031072     .003145
       mstat |  -.0261985   .0220929    -1.19   0.236    -.0696108    .0172138
      hhsize |   .0025771   .0049391     0.52   0.602    -.0071282    .0122825
      yrssch |  -.0048964   .0035676    -1.37   0.171    -.0119067    .0021139
    pryoccpat |   .0908721   .0484652     1.87   0.061    -.0043617    .1861059
     incharge |   .0055975   .0036973     1.51   0.131    -.0016677    .0128626
      timlag |  -.0175402   .0093894    -1.87   0.062    -.0359903    .0009099
  credistance |   .0072864   .0068332     1.07   0.287    -.0061408    .0207137
    paybkper |   .0020992   .0031658     0.66   0.508    -.0041215    .0083198
   trustindex |  -.0063679   .0234377    -0.27   0.786    -.0524228     .039687
cohensioni~x |   .0619111   .0280395     2.21   0.028     .0068136    .1170086
 densityindx |    .001335   .0001725     7.74   0.000     .0009961    .0016739
    decindex |  -.0032494    .00094    -3.46   0.001    -.0050965   -.0014023
   cashindex |   .0032764   .0006936     4.72   0.000     .0019134    .0046393
   laborindex |   .0037985   .0005233     7.26   0.000     .0027702    .0048267
    meetgindx |  -.0005003   .0007949    -0.63   0.529    -.0020622    .0010616
   heterindex |  -.0035774   .0024026    -1.49   0.137    -.0082984    .0011437
        _cons |   3.442906   .2079995    16.55   0.000     3.034188    3.851623
------------------------------------------------------------------------------

. mfx

Marginal effects after regress
      y  = Fitted values (predict)
         =  3.4288161
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]     X
---------+--------------------------------------------------------------------
     sex*|   .0378587     .02855    1.33   0.185  -.018104  .093821   .392276
     age |   .0000189     .00159    0.01   0.991  -.003099  .003137   43.2907
   mstat |  -.0261985     .02209   -1.19   0.236    -.0695  .017103   1.22967
  hhsize |   .0025771     .00494    0.52   0.602  -.007103  .012258   6.21545
  yrssch |  -.0048964     .00357   -1.37   0.170  -.011889  .002096   7.68699
pryocc~t*|   .0908721     .04847    1.87   0.061  -.004118  .185862   .920732
incharge |   .0055975      .0037    1.51   0.130  -.001649  .012844   4.79675
  timlag |  -.0175402     .00939   -1.87   0.062  -.035943  .000863   2.13821
credis~e |   .0072864     .00683    1.07   0.286  -.006106  .020679   1.23245
paybkper |   .0020992     .00317    0.66   0.507  -.004106  .008304   6.51423
trusti~x |  -.0063679     .02344   -0.27   0.786  -.052305  .039569   .803775
cohens~x |   .0619111     .02804    2.21   0.027   .006955  .116868   .881888
densit~x |    .001335     .00017    7.74   0.000   .000997  .001673   72.7865
decindex |  -.0032494     .00094   -3.46   0.001  -.005092 -.001407   52.7693
cashin~x |   .0032764     .00069    4.72   0.000   .001917  .004636   32.8885
labori~x |   .0037985     .00052    7.26   0.000   .002773  .004824   23.7088
```

```
meetgi~x |  -.0005003     .00079   -0.63   0.529  -.002058  .001058   50.3492
heteri~x |  -.0035774      .0024   -1.49   0.136  -.008286  .001132   61.3279
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1

.


      Source |       SS       df       MS              Number of obs =     492
-------------+------------------------------           F( 10,   481) =   14.21
       Model |  1.34749907    10  .134749907            Prob > F      =  0.0000
    Residual |  53.5213242   481  .111270944            R-squared     =  0.2624
-------------+------------------------------           Adj R-squared =  0.2436
       Total |  54.8688233   491  .111749131            Root MSE      =  .33357

------------------------------------------------------------------------------
logprofitper |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |   .0415381   .0328912     1.26   0.207    -.0230901    .1061663
         age |   .0004817   .0018443     0.26   0.794    -.0031422    .0041056
       mstat |  -.0216913   .0253306    -0.86   0.392    -.0714635    .0280809
      hhsize |   .0041771   .0057254     0.73   0.466    -.0070728    .0154269
      yrssch |  -.0031953   .0041373    -0.77   0.440    -.0113248    .0049342
   pryoccpat |   .0681608   .0561502     1.21   0.225    -.0421691    .1784907
    incharge |   .0071267   .0041654     1.71   0.088    -.001058     .0153113
     timlag |  -.0234966   .0108887    -2.16   0.031    -.044892    -.0021012
 credistance |   .0111498   .0079056     1.41   0.159    -.0043839    .0266836
    paybkper |   .0002509   .0036557     0.07   0.945    -.0069322    .007434
       _cons |   3.354864   .1195906    28.05   0.000     3.119879    3.589848
------------------------------------------------------------------------------

. mfx

Marginal effects after regress
      y  = Fitted values (predict)
         =  3.4288161
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.     z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
    sex*|   .0415381     .03289    1.26   0.207  -.022927  .106004   .392276
    age |   .0004817     .00184    0.26   0.794  -.003133  .004096   43.2907
  mstat |  -.0216913     .02533   -0.86   0.392  -.071338  .027956   1.22967
 hhsize |   .0041771     .00573    0.73   0.466  -.007044  .015399   6.21545
 yrssch |  -.0031953     .00414   -0.77   0.440  -.011304  .004914   7.68699
pryocc~t*|   .0681608     .05615    1.21   0.225  -.041891  .178213   .920732
incharge |   .0071267     .00417    1.71   0.087  -.001037  .015291   4.79675
 timlag |  -.0234966     .01089   -2.16   0.031  -.044838 -.002155   2.13821
credis~e |   .0111498     .00791    1.41   0.158  -.004345  .026645   1.23245
paybkper |   .0002509     .00366    0.07   0.945  -.006914  .007416   6.51423
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1


      Source |       SS       df       MS              Number of obs =     492
-------------+------------------------------           F( 11,   480) =   11.62
       Model |  7.22674417    11  .656976742            Prob > F      =  0.0000
    Residual |  47.6420791   480  .099254332            Adj R-squared =  0.2681
-------------+------------------------------
       Total |  54.8688233   491  .111749131            Root MSE      =  .31505
```

```
------------------------------------------------------------------------------
logprofitper |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         sex |   .0545729   .0311106     1.75   0.080    -.0065569    .1157026
         age |   .0005508   .0017419     0.32   0.752    -.0028719    .0039735
       mstat |  -.0339527   .0239767    -1.42   0.157     -.081065    .0131596
      hhsize |   .0016542   .0054173     0.31   0.760    -.0089904    .0122988
      yrssch |  -.0026486   .0039082    -0.68   0.498    -.0103278    .0050307
   pryoccpat |   .0582298   .0530473     1.10   0.273    -.0460038    .1624634
    incharge |   .0058936   .0039373     1.50   0.135    -.0018429    .0136301
     timlag |  -.0223255   .0102851    -2.17   0.030    -.0425349   -.0021161
     credis2 |   .0236681   .0149341     1.58   0.114    -.0056761    .0530124
    paybkper |   .0007074   .0034532     0.20   0.838    -.0060778    .0074927
         sc2 |  -.1211194   .0157372    -7.70   0.000    -.1520417   -.0901971
       _cons |   3.557762   .1159844    30.67   0.000     3.329862    3.785662
------------------------------------------------------------------------------

. mfx

Marginal effects after regress
      y  = Fitted values (predict)
         =  3.4288161
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
     sex*|   .0545729      .03111     1.75   0.079  -.006403  .115548   .392276
     age |   .0005508      .00174     0.32   0.752  -.002863  .003965   43.2907
   mstat |  -.0339527      .02398    -1.42   0.157  -.080946  .013041   1.22967
  hhsize |   .0016542      .00542     0.31   0.760  -.008964  .012272   6.21545
  yrssch |  -.0026486      .00391    -0.68   0.498  -.010308  .005011   7.68699
pryocc~t*|   .0582298      .05305     1.10   0.272  -.045741  .162201   .920732
incharge |   .0058936      .00394     1.50   0.134  -.001823  .013611   4.79675
  timlag |  -.0223255      .01029    -2.17   0.030  -.042484 -.002167   2.13821
 credis2 |   .0236681      .01493     1.58   0.113  -.005602  .052938   .616224
paybkper |   .0007074      .00345     0.20   0.838  -.006061  .007476   6.51423
     sc2 |  -.1211194      .01574    -7.70   0.000  -.151964 -.090275   1.45072
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```