



MICROFINANCE AND POVERTY REDUCTION IN GHANA

**Evidence from the Dormaa Area Teachers Co-operative Credit Union in Dormaa
Municipality-Brong Ahafo**

Master's Thesis

By

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Dedication

To my nephew and niece:

Mike Obeng Kyermenh and Christabel Ankama Chereni

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Abstract

This study examines the impact of microfinance on poverty reduction in Ghana, using evidence from the Dormaa Area Teachers Co-operative Credit Union (DATCCU) in Dormaa Municipality, Brong Ahafo Region. Using cross-sectional data, a quasi-experiment was conducted with three communities in the municipality in a treatment and control framework. A survey was then conducted of beneficiary members, non-beneficiary members and non-members of the DATCCU credit scheme in all three communities. The unique survey design allowed for a simple and straightforward estimation of the programme's impact. The results show that the DATCCU credit scheme and participation in it in general have had no significant impact on annual household income, savings and the total value of basic household assets acquired. That is, there is no evidence of microfinance contributing to poverty reduction in the municipality.

Keywords: *microfinance, poverty, impact evaluation, DATCCU, Dormaa Municipality, Ghana*

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List of Acronyms

ARB	Apex Rural Bank
BRAC	Bangladesh Rural Advancement Committee
CLRM	Classical Linear Regression Model
DATCCU	Dormaa Area Teachers Co-operative Credit Union
GDP	Gross Domestic Product
GLSS	Ghana Living Standards Survey
GPRS	Ghana Poverty Reduction Strategy
GSS	Ghana Statistical Service
LEAP	Livelihood Empowerment Against Poverty
MDG(s)	Millennium Development Goal(s)
MASLOC	Microfinance and Small Loans Centre
MFI(s)	Microfinance Institution(s)
NGO(s)	Non-Governmental Organization(s)
OLS	Ordinary Least Squares
RCT	Randomized Control Trials
UN	United Nations
VIF	Variance Inflation Factor

CHAPTER 1

INTRODUCTION

Microfinance is widely touted as a key development strategy for financial inclusion and poverty alleviation in the world today. The idea, which was first proposed by Mohammed Yunus (a Bangladeshi professor and a founder of the Grameen Bank) in the late 1970s, garnered global attention in the 1990s. This led to the launch of the 1997 Microcredit Summit, which attracted about 3,000 delegates from 137 countries. Delegates at the summit agreed to commit to a goal of reaching 100 million of the world's poorest people with credit for self-employment and other financial services by the year 2005 (Quaraishi, 2007). The importance of microfinance was further emphasized by the United Nations (UN) General Assembly on 29th December 2003, where the year 2005 was declared as the International Year of Microcredit. In the declaration, UN Secretary-General Kofi Annan said;

“The International Year of Microcredit 2005 underscores the importance of microfinance as an integral part of our collective effort to meet the Millennium Development Goals. Sustainable access to microfinance helps alleviate poverty by generating income, creating jobs, allowing children to go to school, enabling families to obtain health care, and empowering people to make the choices that best serve their needs. The great challenge before us is to address the constraints that exclude people from full participation in the financial sector. Together, we can and must build inclusive financial sectors that help people improve their lives”. (UNCDF, 2005)

The UN Millennium Project¹ further advocates that microfinance is a practical development strategy and approach that should be implemented and supported to attain the bold ambition of reducing world poverty by half (UNCDF, 2005). Other development agendas that endorse microfinance in the alleviation of poverty include the G8 Declarations of 2005 and 2004; the UN

¹ The United Nations Millennium Project is an independent advisory body commissioned by the UN Secretary-General to propose the best strategies to meet the Millennium Development Goals. Ten thematic taskforces of more than 250 global experts contributed to the analytic work. A synthesis report entitled “Investing in Development: A Practical Plan to Achieve the Millennium Development Goals” captures the main findings and recommendations of the task force reports (UNCDF, 2005, p.2).

2005 World Summit; the Commission on Private Sector Development; the Brussels Programme of Action; and the Africa Commission Report.

However, three decades after the global arena greeted the emergence of microfinance as a panacea for poverty alleviation, poverty continues to deprive a large proportion of the population in the developing world (Sub-Saharan Africa, South Asia, East Asia and the Caribbean) of their basic livelihoods. According to the World Bank (2010), extreme poverty refers to an average consumption of US\$1.25 or less a day. This implies living on the edge of subsistence. Under this definition, it was estimated that 17% (over a billion) of the people in the developing world lived on US\$1.25 or less a day in 2011. Though progress has since been made in reaching the Millennium Development Goals (MDGs) of halving extreme poverty, the proportion of people living in extreme poverty is still unacceptably high (World Bank, 2015).

This research is therefore motivated by these striking statistics to delve further into the use of microfinance as a policy instrument in the fight against global poverty.

1.1 Problem Statement

According to Ackah and Asiamah (2014), prior to the banking sector reforms in the 1990s in Ghana, the sector was dominated by state-owned banks, with official allocation and pricing of credit. As a result, problems in accessing credit facilities, coupled with the exorbitant interest rates offered by most of the state-owned banks at the time, led to the enactment of the Provisional National Defence Council (PNDC) Law 328 in 1991. This gave rise to the establishment of different categories of non-bank and financial institutions to provide financial services to the poor and the informal sector. This was in line with the government's broad agenda of making financial services available to the rural and urban poor and lifting them out of poverty.

Robinson (2001) argues that the potential of microfinance to reach large numbers of the poor is well understood. In view of this, in 2003, the government of Ghana launched the Ghana Poverty Reduction Strategy (GPRS I), which aimed at providing a policy framework for the fight against poverty (GPRS, 2003). This was followed by GPRS II (2006–2009), which was intended to accelerate economic growth so that Ghana could achieve middle-income status within a measurable period of time. Similarly, in 2006, the government of Ghana established the

Microfinance and Small Loans Centre (MASLOC), under the GPRS II, as a microfinance body responsible for implementing the government's microfinance programmes targeted at reducing poverty, accelerating growth, creating employment and creating wealth.

Furthermore, the Livelihood Empowerment Against Poverty (LEAP) cash transfer programme was launched in 2008 to target extremely poor households with elderly people, disabled people or orphaned/vulnerable children, with the aim of empowering the poor by enhancing their capacity to access government interventions and enabling them to 'LEAP out of poverty'.

However, despite all these reforms and microfinance policy interventions (GPRS I & II, MASLOC and LEAP) in the past two decades, poverty in Ghana still remains high, especially among the rural dwellers. According to the Ghana Living Standards Survey round six (GLSS 6), 24.2% (6.4 million) of the population lives in extreme poverty. Furthermore Ghana's human development index (0.573) for 2013, which takes into account life expectancy, adult literacy, primary schooling and per capita income, ranks the country 137th out of 187 countries and UN-recognized territories. The report further indicates that the multidimensional poverty² index (MPI) of Ghana in 2011 was 30.5%, implying that 30.5% of the population was multidimensionally poor. An additional 18.7% of the population was estimated to be near the MPI in 2011.

In view of the above statistics, it has become necessary to analyse critically the use of microfinance as a policy tool to alleviate poverty among the rural and urban poor in Ghana. This will also increase the knowledge base and understanding of the use of microfinance institutions (MFIs) in the fight against poverty and will offer policy makers a handy tool for making more-informed decisions aimed at empowering the urban and rural poor in order to accelerate long-term sustainable growth.

² The MPI identifies multiple deprivations in the same households in education, health and living standards. The education and health dimensions are each based on two indicators, while the standard of living dimension is based on six indicators. A deprivation score of 33.3% (one-third of the weighted indicators) is used to distinguish between the poor and non-poor. If the household deprivation score is 33.3% or greater, the household (and everyone in it) is classed as multidimensionally poor. Households with a deprivation score greater than or equal to 20% but less than 33.3% are near multidimensional poverty (Ghana Human Development Report, 2014).

1.2 Research Objectives and Questions

The main objective of this study is to examine the impact of microfinance on poverty reduction in the Dormaa Municipality in the Brong Ahafo Region of Ghana. In doing so, we shall examine the effect of microfinance on the income, savings and basic household assets acquisition of beneficiary households.

In regard to the specific objectives, the following questions shall be raised to help to investigate the impact of microfinance as a policy strategy to alleviate poverty in Ghana and the world at large:

- i. Does microfinance increase the income levels of beneficiary households?
- ii. Does microfinance increase the savings of beneficiary households?
- iii. Does microfinance increase the acquisition of basic household assets of beneficiary households?

1.3 Research Hypotheses

In relation to the stated objectives and research questions, three hypotheses shall be constructed and tested to examine if microfinance has any impact on poverty reduction, with emphasis on household income, savings and basic household assets acquisition.

- i. The hypotheses shall be tested to ascertain if microfinance through microcredit has any effect on the income levels of beneficiary households.

H₀: *Microcredit granted to beneficiary households has no effect on their income levels*

H₁: *The income levels of beneficiary households have increased as a result of the microcredit granted to them*

- ii. The hypotheses shall be tested to examine the effect of microcredit on the savings levels of beneficiary households.

H₀: *Microcredit granted to beneficiary households has no effect on their levels of savings.*

H₁: *The savings levels of beneficiary households have increased due to the microcredit granted to them.*

- iii. The hypotheses shall be tested to examine the effect of microcredit on the basic household assets acquisition of beneficiary households.

H₀: *Microcredit granted to beneficiary households has no effect on their basic household assets acquisition.*

H₁: *The basic household assets acquisition of beneficiary households have increased due to the microcredit granted to them.*

CHAPTER 2

BACKGROUND OF THE STUDY

This chapter is divided into four sections. The first section provides an economic overview of Ghana, with emphasis on gross domestic product and annual inflation for the last five years. This is followed by a poverty profile of Ghana, covering the two most recent reports from GLSS 6. The last two sections briefly look at the profiles of Dormaa Municipality and DATCCU.

2.1 Economic Overview of Ghana

A relatively peaceful nation with a stable democracy in the last two and half decades, Ghana has an estimated population of 27.04 million (Ghana Statistical Service (GSS), 2015). The country has posted remarkable results in both macro-economic growth and socio-economic development in recent years, lifting the country from low-income status to lower-middle-income status in July 2011 (World Bank, 2011). Since the discovery of oil in commercial quantities in 2007, Ghana has computed its gross domestic product (GDP) with and without oil (GSS, 2013).

The provisional GDP estimate for 2014 at current prices amounted to Gh¢ 111,436 million (US\$38,584), with GDP per capita of Gh¢4,195 million (US\$1,427). Non-Oil GDP for the same period at current prices was Gh¢106,902 million. However, the prospects the economy achieved in 2011, which reached an all-time high growth rate of 14% at constant 2006 prices, have taken a nose dive. Since then, the GDP growth rate at constant prices has declined continuously from 14% in 2011 to 7.3% in 2013 and further to 4.2% in 2014. This has been due to the continuous slowdown of growth, particularly in the industry and service sectors of the economy. The continual depreciation of the Ghanaian currency against the US dollar and other major international currencies has also partly accounted for the poor performance of the economy.

The agricultural, industry and service sectors constitute the three major sectors of the economy. Out of the three sectors, agriculture posted the highest growth in 2014 at 5.2%, maintaining the same level as 2013. This was followed by the service sector at 4.1% growth in 2014, falling from 10.3% in 2013. Industry recorded the lowest growth rate at 3.9% in 2014 after falling from 6.6% in the previous year.

Though agriculture's growth rate has improved since 2011, its contribution to GDP has fallen consistently from 29.8% in 2010 to 19.9% in 2014. Industry, the second largest contributor to GDP, recovered with a 28.4% contribution to GDP in 2014 after falling to 27.7% in 2013 from the 2012 figure of 28.0%. The service sector is the largest contributor to GDP. Though its contribution to GDP declined from 51.7% in 2010 to 49.1% in 2011 and 2012, it increased to 50.6% in 2013 and further to 51.7% in 2014. However, its growth rate suffered a sharp decline from 12.1% in 2012 to 4.2% in 2014. A summary of the GDP indicators and the sectorial statistics are presented in Tables 2.1 to 2.3 below.

Table 2.1 GDP Summary Indicators

Economic Aggregates	2010	2011	2012	2013*	2014**
<i>Population estimate (million)</i>	24.66	25.24	25.82	26.43	27.04
<i>Exchange rate (C/\$)</i>	1.43	1.51	1.81	1.92	2.94
GDP current (million GhC)	46,042	59,816	75,315	94,939	113,436
Non-oil GDP current (million GhC)	45,865	56,070	69,666	87,604	106,902
GDP current (million US\$)	32,186	39,517	41,656	49,447	38,584
Per capita GDP (GhC)	1,867	2,370	2,916	3,592	4,195
Per capita GDP (US\$)	1,305	1,566	1613	1,871	1,427
Growth Rates					
GDP at current market prices	25.8	25.9	25.9	26.1	19.5
GDP at constant 2006 prices	4.8	14.0	9.3	7.3	4.2
Non-oil at constant 2006 prices	7.6	8.2	8.6	6.7	4.1
Change in GDP deflator	16.6	13.9	15.2	17.4	16.6

*Revised

Source: Ghana Statistical Service (2015)

**Provisional

Table 2.2 GDP Distribution by Sector (2010–2013)

Sector	Per Cent				
	2010	2011	2012	2013*	2014**
Agriculture	29.8	25.3	22.9	21.6	19.9
Industry	19.1	25.6	28.0	27.7	28.4
Service	51.1	49.1	49.1	50.6	51.7
GDP at basic prices	100	100	100	100	100

*2012 Finalized

Source: GSS (2015)

**2013 Revised

Table 2.3 GDP Growth Rates by Sector at 2006 Constant Prices (2010–2014) Per Cent

Sector	2010	2011	2012	2013*	2014**
Agriculture	5.3	0.8	2.3	5.2	5.2
Industry	6.9	41.6	11.0	6.6	3.9
Service	9.8	9.4	12.1	10.3	4.1
GDP at basic prices	7.9	14.0	9.3	7.3	4.2
GDP in purchasers' value	7.9	14.0	9.3	7.3	4.2

*2013 Revised

Source: GSS (2015)

**2014 Provisional

Another key economic indicator in Ghana is inflation. Average yearly inflation in Ghana from 2010 to 2014 exhibited similar behaviour to the GDP indicators over the period. With the economy taking a nose dive in 2011, and with GDP declining from 14% to 4.2% in 2014, average yearly inflation demonstrated an inverse relationship with the GDP estimates, rising consistently from 8.73% in 2011 (the lowest in the period) to a high of 15.45% in 2014. As a result, Ghana missed its targeted end-of-year inflation of 13 ± 2 % for 2014. According to GSS (2015), increases in the prices of housing, water, electricity, gas and other fuel products, coupled with depreciation of the Ghanaian currency against the major international currencies, has accounted for the soaring inflation in the country. In 2014, the Ghanaian cedi depreciated 31.2%; 29.3% and 23.6% against the US dollar, the pound sterling and the euro, respectively (Terkper, 2015). A summary of the yearly average inflation figures is presented in Table 2.4 below.

Table 2.4 Average Annual Inflationary Trend in Ghana (2009–2014)

Year/Month	Index³ 2002=100	Change Rate (%)	
		Monthly	Yearly
2010 average	336.48	0.69	10.79
2011 average	365.84	0.69	8.73
2012 average	399.88	0.71	9.13
	2012=100		
2013 average	111.61	1.08	11.65
2014 average	128.90	1.33	15.45

Source: Compiled from GSS (2015)

³ It should be noted that the base index used for the computation of the consumer price index in 2012 and beyond was rebased to adjust for the new consumer basket of goods purchased by the average Ghanaian.

The total stock of public debt (domestic and external) of the country as at September 2014 stood at GhC569,705.90 million (US\$21,733.51 million). This was made up of GhC40,644.15 million (US\$12,678.62 million) and GhC29,041.75 million (US\$9,054.89 million) of external and domestic debts, respectively. The ratio of total debt to GDP for the period stood at 60.8%. The sharp rise in public debt was mainly due to fiscal indiscipline by successive governments, an increased wage bill and persistent borrowing by governments to fund capital expenditures (Terkper, 2015).

2.2 Poverty

Poverty, according to the World Bank Poverty Manual (2005, p.8), is pronounced deprivation in well-being. The conventional view links well-being primarily to command over commodities, so the poor are those who do not have enough income or consumption to put them above some adequate minimum threshold. This view sees poverty largely in monetary terms. Poverty may also be tied to a specific type of consumption; thus someone might be house poor, food poor or health poor. These dimensions of poverty can often be measured directly, for instance by measuring malnutrition or literacy.

2.2.1 Poverty Profile of Ghana

Poverty in Ghana has been defined from two perspectives: as *absolute* and *extreme* poverty. Both are measured using the poverty lines set by GSS (GSS-GLSS 6, 2014). Absolute poverty⁴ is measured with the upper poverty line, which is currently pegged at GhC1,314 (US\$667.95) per year. This is the minimum amount required by an individual to meet his or her essential food and non-food consumption expenditure for a year. On the other hand, extreme poverty is measured with the lower poverty line pegged at GhC792.05 (US\$401.5), which is the minimum amount expected to meet an individual's food consumption per year. The absolute poverty line indicates the minimum living standard in Ghana, while the extreme poverty line indicates that even if households spend their entire budget on food, they would still not meet the minimum food requirement (GLSS 6, 2014). For the purposes of this study, we shall denote the upper poverty line as the *new absolute poverty line* and the lower poverty line as the *new extreme poverty line*. This is because the poverty line was rebased in 2012/13. Before the rebasing of the poverty line

⁴ In US dollar terms, the absolute poverty line is equivalent to about US\$1.83 per day (US\$1.10 for the extreme poverty line), expressed in constant prices of Greater Accra in January 2013 (GLSS 6, 2014).

in 2012/13, the upper poverty and lower poverty lines were pegged at GhC370.89 and GhC288.47 per annum, respectively. Similarly, for the purposes of this study and convenience sake, we shall refer to the latter poverty lines as the *old absolute poverty line* and the *old extreme poverty line*, respectively.

Apart from the poverty line, two major indicators are also considered in the analysis of poverty in Ghana. They are:

- i. *The poverty incidence index*: This measures the proportion of the population that is poor. It is popular because it is easy to understand and measure, but it does not indicate how poor the poor are.
- ii. *The poverty gap index*: This measures the intensity of poverty in the country, which is the average ratio of the gap to which individuals fall below the poverty line (for non-poor, the gap is counted as zero). The measure does not reflect changes in inequality among the poor but adds up the extent to which individuals on average fall below the poverty line, expressing it as a percentage of the poverty line.

The most important report for poverty analysis in Ghana is the GLSS. It provides nation-wide information on the living conditions of the Ghanaian household. Since 1987, six rounds of such surveys have been conducted in Ghana. The most recent survey was GLSS 6, conducted in 2012/13. The survey used the new poverty lines and also revised the GLSS 5 (2005/06) report with the new poverty lines, making the two convenient for comparison. For a large portion of this discussion, we shall focus on GLSS 6 (2012/13)

However, we shall take a quick glance at the three surveys preceding GLSS 6 (2012/13) before we proceed with our analysis of the incidence of poverty and inequality reported in the two most recent reports. GLSS 5 was initially conducted in 2005/06 with the old poverty lines used in the two previous surveys (GLSS 3 in 1991/92 and GLSS 4 in 1998/99). In these three surveys, the upper poverty line (absolute poverty) was pegged at GhC370.89 per annum and the lower poverty line (extreme poverty) was pegged at GhC288.47 per annum. The findings from these three surveys (GLSS 3, GLSS 4 and GLSS 5) indicate that poverty declined from 51% in 1991/1992 to 39.5% in 1998/1999 and further to 28.5% in 2005/2006. Though poverty was fast

declining, the level of inequality was also on the rise. The Gini coefficient for the period shows that inequality rose from 35.3% in 1991/1992 to 37.8% in 1998/1999 and further to 39.4% in 2005/2006. Table 2.5 below gives the trends in poverty and inequality in Ghana from 1991 to 2006, based on the old poverty line.

**Table 2.5 Trends in Absolute Poverty and Inequality in Ghana (1991–2006)
(Old Absolute Poverty Line=GhC370.89)**

		Urban	Rural	National
1991/92	Population share	33.2	66.8	100
	Incidence of poverty	27.7	63.6	57.1
	Gini coefficient	32.1	32.9	37.8
1998/99	Population share	33.7	66.3	100
	Incidence of poverty	19.4	49.6	39.5
	Gini coefficient	34	35.8	37.8
2005/06	Population share	36.7	62.4	100
	Incidence of poverty	10.8	39.2	28.5
	Gini coefficient	35.5	36.1	39.4

Source: Compiled by Osei (2011) from GSS (1991–2006)

However, due to changes in the consumption pattern of the average Ghanaian over time, the poverty line was rebased in 2012/13 to account for the changes in the economy. The new poverty line, as noted earlier, pegs the upper poverty line at GH¢1,314 and the lower poverty line at Gh¢792.05.

Based on the new absolute poverty line, it was observed that 24.2% of Ghanaians were estimated to be poor with a poverty gap of 7.8% in GLSS 6 (2012/13), whereas 31.9% were estimated to be poor with a poverty gap of 11% in the revised GLSS 5 (2005/06). Furthermore, the incidence of poverty among the rural population accounted for 78.0% of the total poverty in 2012/2013. This is consistent with earlier findings in 1991/92 to 2005/06 with the old poverty line, where the rural population accounted for more than 80% of the total poverty. Rural savannah recorded the highest poverty incidence rates of 55% and 64.2% in 2012/13 and 2005/06, respectively. These estimates in both years were higher than the combined poverty incidence rate in three urban

demographic areas. Furthermore, rural savannah's contribution to the total poverty (40.8% in 2012/13 and 46.9% in 2005/06) was higher than the combined incidence of poverty in the three urban areas in 2012/13 and 2005/06. This further reinforces the findings of the previous poverty reports in 1991/92–2005/06, where poverty was predominant in the rural areas. Despite the considerable decrease in the incidence of poverty (from 51.7% in 1991 to 24.2% in 2012/13) in the country, it still remains a challenge in the rural areas, which have the largest proportion of the population. The table below provides the details on the poverty incidence and poverty gap in Ghana for 2005/06–2012/13, based on demographic location

Table 2.6 Poverty Incidence and Poverty Gap by Locality (%) in Ghana 2005/06–2012/13 (New Absolute Poverty Line=GhC1,314)

Locality	Poverty Incidence	Contribution to Total Poverty	Poverty Gap	Contribution to Total Poverty Gap	Poverty Incidence	Contribution to Total Poverty	Poverty Gap	Contribution to Total Poverty Gap
	2012/13				2005/06			
Accra (GAMA)	3.5	2.2	0.9	1.8	12.0	4.4	3.4	3.7
Urban coastal	9.9	2.1	2.3	1.5	6.4	1.2	1.3	0.7
Urban forest	10.1	9.0	2.1	5.8	8.7	4.0	2.2	3.0
Urban savannah	26.4	8.6	6.6	6.8	30.1	5.1	10.7	5.3
Rural coastal	30.3	6.9	8.7	6.3	27.2	9.3	6.7	6.7
Rural forest	27.9	30.1	7.9	26.7	33.1	29.1	8.4	21.4
Rural savannah	55.0	40.8	22.0	51.1	64.2	46.9	28.0	59.4
Urban	10.6	22.0	2.5	15.9	12.4	14.7	3.7	12.6
Rural	37.9	78.0	13.1	84.1	43.7	85.3	15.4	87.4
All Ghana	24.2	100.0	7.8	100	31.9	100.0	11.0	100.0

Source: GLSS 6 (2014)

2.2.2 Poverty by Administrative Region in Ghana

For administrative purposes, Ghana has been divided into ten regions. These are Western, Central, Greater Accra, Eastern and Volta regions in the southern sector. The rest are Ashanti, Brong Ahafo, Northern, Upper West and Upper East regions in the northern sector. Table 2.7 below presents the regional analysis of the incidence of poverty and the poverty gap in Ghana for 2012/13 and 2005/06, using the new absolute poverty line. We find that the incidence of poverty improved in all ten regions in 2012/13 from the previously reported year (2005/06). Greater Accra, which includes the capital (Accra), recorded the lowest incidence of estimated poverty at 5.6% and 13.5% in both years. We further observe that the Upper West Region recorded the

highest incidence of estimated poverty (70.7% in 2012/13 and 89.1% in 2005/06) among the ten regions. However, its contribution to the total poverty was low at 8.4% in 2012/13 and at 10.0% in 2005/06 because it is the smallest region in terms of population in Ghana. Furthermore, the incidence of poverty is predominantly higher in the northern sector of the country than in the southern sector. Apart from Volta Region, which recorded a poverty incidence rate of 33.8% in 2012/13 and 37.3% in 2005/06, the rest of the regions in the southern sector recorded lower estimates than all the regions in the northern sector. Additionally, we note that the poverty gap is higher in the Northern and the two Upper regions than it is in the remaining seven regions. Ashanti was the only region in the northern sector that recorded an improved poverty incidence rate of 14.8% in 2012/13 and 24% in 2005/06: lower than the national averages of 24.2% and 31.9%, respectively. Though Ashanti Region had a lower poverty incidence rate than the national averages in 2012/13 and 2005/06, its contribution to total poverty in the northern sector was the second highest after the Northern Region. This is because it is the largest region in terms of population in the northern sector.

Table 2.7 Poverty Incidence and Poverty Gap by Administrative Region (%) in Ghana 2005/06–2012/13 (Absolute Poverty Line=Gh¢1,314)

Region	Poverty Incidence	Contribution to Total Poverty	Poverty Gap	Contribution to Total Poverty Gap	Poverty Incidence	Contribution to Total Poverty	Poverty Gap	Contribution to Total Poverty Gap
	2012/13				2005/06			
Western	20.9	7.9	5.7	6.8	22.9	7.3	5.4	5.0
Central	18.8	6.9	5.6	6.4	23.4	6.4	5.6	4.4
Greater Accra	5.6	3.8	1.6	3.5	13.5	5.9	3.7	4.7
Volta	33.8	12.1	9.8	11.0	37.3	8.7	9.2	6.2
Eastern	21.7	9.3	5.8	7.8	17.8	7.5	4.2	5.2
Ashanti	14.8	12.0	3.5	9.0	24.0	12.6	6.4	9.8
Brong Ahafo	27.9	11.4	7.4	9.4	34.0	9.8	9.5	7.9
Northern	50.4	20.8	19.3	24.9	55.7	21.0	23.0	25.2
Upper East	44.4	7.4	17.2	9.0	72.9	10.9	35.3	15.3
Upper West	70.7	8.4	33.2	12.3	89.1	10.0	50.7	16.4
All Ghana	24.2	100.0	7.8	100	31.9	100.0	11.0	100.0

Source: GLSS 6 (2014)

Dormaa Municipality, which is located in Brong Ahafo, is one of the urban communities in the region. Since poverty studies in Ghana have mostly been conducted at the national, regional and

demographic levels, estimates of poverty figures at the municipal and district levels are sometimes lacking. However, based on the demographic classification of Dormaa Municipality, as one of the urban forest areas in Ghana, the incidence of poverty can be estimated to be 10.1%, as reported in GLSS 6 (2012/13).

2.3 Profile of Dormaa Municipality

Dormaa Municipality is located in the western part of the Brong Ahafo Region. The municipal capital is Dormaa Ahenkro. It is located about 80 kilometres west of the regional capital, Sunyani, and about 458 kilometres from the shores of Accra (the national capital). The total land area of the municipality is 1,368 square kilometres, representing about 3.5% of the total land area of Brong Ahafo Region and about 0.6% of the country. It has 345 small and remote settlements. Below are a map of Ghana to the left and a map of Brong Ahafo Region to the right showing the location of Dormaa Municipality.



Figure 2.1 Map of Ghana

Source: Wikipedia (2014)

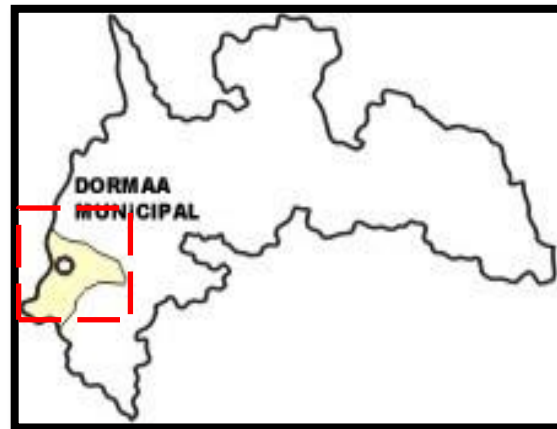


Figure 2.2 Map of Brong Ahafo Region Showing Dormaa Municipality

Source: Ghana Districts.Com (2015)

According to the 2002 census, the population of the municipality was 150,229. Those in the age group 0–14 formed 36% of the population, while 57% were within the age group 15–64. In addition, those aged above 64 years constituted 7% of the population. The male–female ratio was 1:1.07. This implies that for every nine males in the municipality, there are ten females. This

phenomenon is not different from the statistics at the national level, where females outnumber males. The implication here is that any measures to alleviate poverty should target females and include them in decisions regarding the socio-economic development of the municipality.

The municipality is an agrarian-based community, with 56–60% of its labour force engaged in agriculture. Farming in the municipality is largely carried out on a traditional and small-scale basis. The average acreage cultivated ranges between six and ten acres for all crops. Presently, the main food crops cultivated in commercial quantities and for subsistence in the municipality include maize, plantain, cassava, yam, cocoyam, tomatoes and pepper. The municipality is also known for the production of cocoa and coffee. The service sector employs about 19% of the population. This comprises people engaged in teaching, public services, transport, communication services and commercial trading activities. Employment in industry accounts for 15.5% of the labour force, consisting of people employed in wood processing (saw milling and furniture), dressmaking, leather works, cassava processing, brick and tile works, pottery, and metal works.

2.4 Profile of DATCCU

DATCCU started its operations in 1996 as an offshoot of the defunct Dormaa District Teachers' Credit Union, which was established in the late 1960s to provide financial services to teachers in the district.

It provides savings and credit facilities to its members at a moderate interest rate, freeing them from the clutches of the money lenders who were charging exorbitant interest on loans at the time. The credit union has expanded its membership to non-teachers, boosting its operations to become the largest co-operative credit union in Brong Ahafo Region. Presently, the main target group of the credit union is the poor and vulnerable in the municipality, who have been denied financial services for some time. This objective informed DATCCU's decision to open up to non-teachers and the general public in the municipality, which has aided it in becoming the largest co-operative credit union in the region.

The total membership of the credit union as of October 2014 was 11,250, of which 4,582 were females and 6,568 were males (DATCCU, 2014). There are also 100 different group associations operating with the credit union. Membership of DATCCU is open to all individuals, groups or

associations in the municipality by opening an account with or without an initial deposit. The total savings of members of the credit union for the year ending October 2014 were GhC15,625,056. This comprised GhC7,249,977 by females, GhC8,184,955 by males and GhC190,124 by the various group associations. The total loans outstanding for the same period stood at GhC13,343,691, of which GhC5,692,193 was given to female clients, GhC7,520,981 was given to male clients and GhC130,516 was given to group associations (DATCCU, 2014). In terms of the number of beneficiaries of DATCCU loans, 6,892 individuals and 20 group associations benefitted from the credit facilities in the same period. In total, 2,745 of these beneficiaries were females and 4,127 were males. The total assets and liabilities reported by the credit union for the same period stood at GhC18,219,330 and GhC18,219,330, respectively.

DATCCU operates two main credit facilities for its members. They are short- and long-term loans for individuals and agricultural loans for farmers who identify themselves as a group. These credit facilities offered by DATCCU are typical examples of two of the conventional models in the microfinance literature. The short- and long-term credit facilities of DATCCU fall under the individual microfinance lending model, while the agricultural loans explain the classic Grameen model or the solidarity groups model, which we shall discuss in the subsequent chapter. The conventional models in the microfinance literature advocate for collateral-free loans; however, this may not be the case for some members of DATCCU. Members who cannot provide guarantors for their loans are required to use collateral instead. The agricultural loans are collateral free, since the farmers' groups act as their own guarantors. The group therefore becomes liable for any default by any member of the group. For individual short- and long-term loans where no collateral is required, the guarantor becomes liable if the borrower defaults.

The size of a DATCCU loan is usually determined by the member's, group's or association's savings with DATCCU. As a policy, the maximum loan size to any member, group or association is twice its total savings with DATCCU. However, this may be revised either upwards or downwards for previous borrowers, depending on their credit worthiness. New members are, however, ineligible for loans until they have had six months of membership. The repayment period for all DATCCU loans varies from 3 to 36 months, with an interest rate of 2.5–5% per month, depending on the type of credit facility.

CHAPTER 3

THEORY AND LITERATURE REVIEW

This chapter reviews the theory and literature that underpin the concept of microfinance and impact evaluation studies. The theory and literature focus on the evolution, models and various paradigms of microfinance. Furthermore, the chapter discusses the microfinance sector in Ghana, with emphasis on the history, key structures and stakeholders of the industry. This is followed by a brief discussion of impact evaluation studies in microfinance and some major empirical findings in the field.

3.1 Microfinance Literature Review

3.1.1 Definition

The terms “microfinance” and “microcredit” are often used interchangeably. However, there is a clear distinction between the two. Otero (1999, p.8) defines “microfinance” as “the provision of financial services to low-income poor and very poor self-employed people”. In the view of Ledgerwood (1999), these financial services generally include savings and credit but can also include other financial services, such as insurance and payment services. In its overview of microfinance in Ghana, the Ministry of Finance of Ghana defines microfinance as the provision of financial services and the management of small amounts of money through a range of products and a system of intermediary functions that are targeted at low-income clients.

Microcredit, on the other hand, is referred to by Sinha (1998, p.2) as small loans, whereas microfinance is appropriate where non-governmental organizations (NGOs) and MFIs supplement the loans with other financial services (savings, insurance, etc.). The Ministry of Finance of Ghana also shares Sinha’s definition by referring to microcredit as small loans to clients made by banks or other institutions. From the foregoing definitions, it can be viewed that microcredit is a component of microfinance that is not limited to microcredit but also involves microsavings, microinsurance, pensions, payments and transfers.

3.1.2 Evolution of Microfinance

Microcredit and microfinance are relatively new concepts, and the terms are often used interchangeably in the field of development, as mentioned earlier. Therefore, we shall ignore the above distinctions in the discussion of the evolution of microfinance. The term “microfinance” in its modern usage is widely credited to Professor Muhammad Yunus – founder of Grameen Bank and a Nobel Prize winner in 2006 – among many practitioners in the field of development. It is believed that the idea was first introduced in the 1970s by Professor Muhammad Yunus when, in his bid to help lift the rural impoverished and financially constrained people of Bangladesh out of poverty, he lent US\$27 to a total of 42 poor villagers of Jobra. To his surprise, the villagers paid him back after some time. He later discovered that not only could the poor pay back their loans but with interest rates higher than the 60% that was typical of traditional commercial banks in Bangladesh at the time. Further studies by Yunus into the lives of the impoverished villagers of Jobra led him to realize that it was a lack of access to credit from formal financial institutions that had made them poor. This led to his Grameen Project in 1976, which involved lending to groups of five (the classical Grameen model) without collateral. This became known as Grameen Bank in 1983 (Yunus, 1999; Esty, 2011). By 1994, it had mobilized more than 2 million members, 94% of them women, and had achieved a loan recovery rate of more than 95% (Khandker, 1998, p.3)

According to Otero (1999), Robinson (2001) and Wrenn (2005), the term “microfinance” first came to prominence in the 1970s. Similarly, Elahi and Rahman (2006, p.477) explain that the term “microcredit”, coined in the 1970s, refers to the provision of loans to the poor to establish income-generating projects, while the term “microfinance” has come to be used since the late 1990s to indicate the so-called second revolution in credit theory and policy that are customer centred rather than product centred. In the view of Robinson (2001), the 1980s represented a turning point in the history of microfinance: MFIs such as Grameen Bank and Bank Raykat, Indonesia, began to show that they could provide small loans and savings services profitably on a large scale. They received no continuing subsidies, were commercially funded, were fully sustainable and could attain wide outreach to clients (Robinson, 2001; Wrenn, 2005). It was also

during this time that the term “microcredit” came to prominence in the context of development (MIX⁵, 2005; Wrenn, 2005).

Robinson (2001, p.54) asserts that the 1990s saw accelerated growth in the number of MFIs created and an increased emphasis on reaching scale. Dichter (1999, p.12) refers to the period as the decade of microfinance. According to Robinson (2001), these developments led microfinance to turn into an industry. Along with the growth in microcredit institutions, attention changed from just the provision of credit to the poor (microcredit) to the provision of other financial services, such as savings and pensions (microfinance), when it became clear that the poor had a demand for these other financial services (MIX, 2005). Further attention was given to microfinance through the launch of the 1997 Microcredit Summit and more recently the declaration of the year 2005 as the International Year of Microcredit by the UN.

3.1.3 Characteristics of Microfinance

In view of the above definitions, it would be appropriate to outline some key characteristics of microfinance to provide for a broader understanding. According to the Karlan and Goldberg (2007, p.3), there are at least nine traditional features of microfinance. These are:

1. Small transactions and minimum balances (whether loans, savings or insurance)
2. Loans for entrepreneurial activities
3. Collateral-free loans
4. Group lending
5. Targeting poor clients
6. Targeting female clients
7. Simple application processes
8. Provision of services in underserved communities
9. Market-level interest rates

Furthermore Karlan and Goldberg (2007) states that these features may not be exhibited by all MFIs, since they may differ from country to country or from sub-region to sub-region. However, the features of targeting the poor and small transactions appear to be universal among all MFIs.

⁵ Microfinance Information eXchange.

What remains contested about these two universal characteristics is the definition of what constitute *the poor* and *small transactions*, since they are relative. Furthermore, not all MFIs charge market-level interest rates, since studies have shown that some institutions in Asia, Africa and Latin America are charging exorbitant interest rates.

3.1.4 Microfinance and Poverty Reduction

According to Otero (1999), when credit facilities are made available to the poor in society, it strengthens their dignity and self-actualization, thus creating an enabling environment to help empower them to participate in economic and social activities. This enables the poor to be productive and lifts them out of poverty. Access to credit may help them to avoid distressed sales of assets and to replace productive assets destroyed in natural disasters (World Bank, 2002). Thus, microfinance offers the poor and the financially constrained in society some form of insurance to smooth income and consumption.

MFIs have become increasingly involved in providing financial services to small- and medium-scale enterprises, focused on poverty reduction and the economic survival of the poorest of the poor (Afrane, 2002). This provides micro enterprises and the poor the needed financial services to expand their businesses and improve their welfare. Rhyne and Otero (1992) argue that financial sustainability and high outreach have a positive impact on poverty alleviation because they guarantee sustainable access to credit for the poor. Khandker (2005) is of the view that microfinance includes small-scale transactions in credit and savings designed to meet the needs of small- and medium-scale producers and businesses. These programmes also offer skills-based training to augment productivity, provide organizational support and raise consciousness to empower the poor (Khandker, 2005).

Robinson (2001) argues that small-scale commercial financial services in the form of credit and savings help the poor to improve household and enterprise management, increase productivity, and smooth income flows and consumption costs. This enhances the capacity of the poor to enlarge and diversify their microenterprises and increase their incomes. Credit is considered an essential input to increase agricultural productivity, mainly land and labour. It is believed that credit boosts income levels and increases employment at the household level and thereby alleviates poverty. Credit enables the poor to overcome their liquidity constraints and undertake

some investments, especially in improved farming technology and inputs, thereby leading to increased agricultural production (Adugna and Hiedhues, 2000; Nathan et al., 2004).

Furthermore, microfinance theory explains that access to credit through participation can contribute to a long-lasting increase in income by means of raising investments in income-generating activities; diversification of the possible sources of income; accumulation of assets; a reduction in vulnerability due to illness, drought and crop failures; and better education, health and housing for borrowers (Lensink and Pham, 2008). This view is supported by proponents such as Hulme and Mosley (1996) and Latifee (1997), who argue that microfinance is an effective instrument for fighting poverty.

From the above theories, it is evident that making financial services available to the poor and the informal sector in society will considerably culminate in poverty reduction. Therefore, MFIs have a substantial role to play in serving the financial needs of the poor and informal sector if the fight against poverty is to be successful.

However, there are others who are doubtful about the effectiveness of microfinance as a tool for poverty alleviation. Critics such as Rogaly (1996), Hashemi and Rosenberg (2006), Wright (2000) and Roodman (2009) have less hope and raise concerns about the negative impact of microfinance. Specifically, Rogaly (1996, pp.109-110) points out five major concerns about MFIs. He argues the following: they encourage a single-sector approach to the allocation of resources to fight poverty; microcredit is irrelevant to the poorest people; an over-simplistic notion of poverty is used; there is too much emphasis on scale; and there is inadequate learning and change taking place. Hashemi and Rosenberg (2006) argue analogously that microfinance does not reach the poorest in the community. Similarly, a United Nations Capital Development Fund (UNCDF, 2009) report states that though microcredit may be helpful in reducing poverty, it is never a panacea and is only one of such tools to reduce poverty or the vulnerabilities of the poor.

Wright (2000, p.6) states that much of the scepticism of MFIs stems from the argument that microfinance projects “fail to reach the poorest, generally have a limited effect on income... drive women into greater dependence on their husbands and fail to provide additional services

desperately needed by the poor”. He further argues that many development practitioners not only find microfinance inadequate but also find that it actually diverts funding from “more pressing or important interventions”, such as health and education. Roodman (2009) asserts that microcredit might actually leave people worse off, just as credit cards and mortgages have made people poorer in developed countries. In his critique of microfinance programmes, Karnani (2007) argues that though microcredit yields some non-economic benefits, it does not necessarily alleviate poverty, adding that the microfinance narrative is less promising than the reality. He further explains that the ideal approach to fighting poverty is to create jobs and increase worker productivity, instead of relying on microcredit. In the view of Karnani, this should be the solution because poor borrowers tend to acquire traditional loans to ensure their subsistence and seldom invest these funds in new technology, fixed capital or the hiring of labour.

3.1.5 Paradigms of Microfinance

Microfinance as a policy for poverty reduction can be viewed from different competing and contrasting paradigms but with similar outcomes. What differs among policy makers is the approach to rolling out such programmes to beneficiaries and who should be the ultimate beneficiaries. Besides the above differences, recent debate by experts in the industry has focused on the sustainability of such programmes, which has become an integral component in making distinctions about the various paradigms of microfinance. In the current literature, three paradigms are highlighted, which we shall briefly discuss. They are:

- i. ***Financial sustainability paradigm***: This paradigm, sometimes referred to as the financial systems approach or the sustainability approach, emphasizes self-sustaining and profitable donor programmes that are able to raise funds from international markets instead of depending on development agencies by competing with private-sector banking institutions. The approach has received wide support and publications from the United States Agency for International Development (USAID), the World Bank, the United Nations Development Programme (UNDP) and the Consultative Group to Assist the Poor (CGAP) since the mid-1990s through the Best Practices Guidelines. Though it has the poorest as its target group, critics argue that they are rather serving the bankable poor. According to proponents of this paradigm, the self-sustainability concept will cushion financial support to the poor and non-bankable in light of diminishing aid budgets and

opposition to welfare and redistribution in macro-economic policies (Mayoux, 2005). It also focuses on setting cost-recovery interest rates and reaching out to large groups of the vulnerable through economies of scale and reduced transaction costs.

- ii. ***Feminist empowerment paradigm***: This paradigm places emphasis on the empowerment of poor women and the vulnerable in society through financial accessibility. Mayoux (2005) states that the main target group is poor women and women capable of providing alternative female role models for change. Therefore, policies designed to promote gender equality, respect for women's human rights and the involvement of women in decision making are central to this paradigm. Chen (1996) advocates that broad sector policies that remove or curtail the constraints and bottlenecks that limit women's participation in the existing labour market, infrastructure and services are also essential in obtaining the set goal of this paradigm. She further proposes that participatory principles to build up incremental knowledge of industries to enable women to develop their strategies for change should be encouraged to complement other broad central policies.
- iii. ***Poverty alleviation paradigm***: This paradigm of microfinance focuses on reducing poverty at the household and community levels through the provision of small loans and savings to vulnerable households. Its main target group is the poorest. It also focuses on programmes such as developing sustainable livelihoods, community development and social service provision like literacy, healthcare and infrastructure development (Mayoux, 2005). Proponents of this paradigm also advocate for greater women's participation due to the high levels of female poverty, well-being responsibilities and vulnerabilities at the household level.

3.1.6 Models of Microfinance

Several models of microfinance exist, despite the lack of data on some of these models. Grameen Bank (2000a) identified 14 different models for microfinance implementation. However, there are three basic models with wide universal recognition. We shall therefore limit our discussion to these three. According to Karlan and Goldberg (2007,p.5) they are:

- i. **Solidarity groups:** The classic microfinance model, often referred to as the Grameen model after the pioneering Grameen Bank in Bangladesh, involves 4–7 people in solidarity groups, in which members of the group collectively guarantee repayment for each member. In case any member of the group defaults or fails to repay their loan, the liability falls on all the other members of the group to repay the loan, since failure to do so discredits them from securing future loans.
- ii. **Village banking:** The village banking model expands the solidarity group concept to a larger group of 15–30 people who are responsible for managing the loan provided by the MFI, as well as for making and collecting loans to and from each other. In some cases, the number of group members may go up to 50. In India, self-help groups operate according to a similar format.
- iii. **Individual lending:** Individual lending is simply the provision of microfinance services to individuals instead of groups. Individual lending can be hard to distinguish from traditional banking, since they have similar forms. This is especially true where MFIs require collateral (or collateral substitutes, such as household items with low market value but high personal value to the borrower) from borrowers before lending to them, since collateral-free lending has traditionally been one of the hallmarks of microfinance.

3.1.7 History of Microfinance in Ghana

The evolution of microfinance in Ghana can be traced as far back as 1955 to the Canadian Catholic missionaries who established the first credit union in Africa in the Northern Region of Ghana. However, the idea of microfinance existed in Ghana long before this in an informal and traditional form of savings and borrowing through self, family members and friends. Furthermore, “Susu”⁶, one of the traditional methods of saving, is still operational in Ghana. The “Susu” concept, which is believed to have been transferred from Nigeria to Ghana in the early 1900s (Bank of Ghana, 2007), continues to provide financial services to the majority of the rural poor and urban communities in Ghana today. According to the Bank of Ghana (2007), the

⁶ Susu is a microsavings mechanism where individual collectors pick up daily deposits from savers over an agreed period of time and return the accumulated savings minus one day’s deposit as fees (Aryeetey and Udry 1995; Aryeetey 1994)

microfinance sector in Ghana has evolved and gone through four distinct phases, just as the world has. They are:

- i. **Phase One:** The provision of subsidized credit by governments started in the 1950s, when it was assumed that the lack of money was the ultimate hindrance to the elimination of poverty.
- ii. **Phase Two:** In the 1960s and 1970s, the provision of microcredit to the poor was mainly through NGOs. During this period, sustainability and financial self-sufficiency were still not considered important.
- iii. **Phase Three:** In the 1990s, the formalization of MFIs began.
- iv. **Phase Four:** Since the mid-1990s, the commercialization of MFIs has gained importance, with the mainstreaming of microfinance and its institutions into the financial sector.

In Ghana, the sector is categorized into three broad groups from a supplier's perspective. The three groups according to the Ghana Microfinance Policy (2006) are:

- i. Formal suppliers, such as savings and loans companies, rural and community banks, and some development and commercial banks
- ii. Semi-formal suppliers, such as credit unions, financial NGOs and cooperatives
- iii. Informal suppliers, such as Susu collectors and clubs, rotating and accumulating savings and credit associations, traders, moneylenders and other individuals

3.1.8 Key Stakeholders and Structure of Microfinance in Ghana

According to the Bank of Ghana (2007), the microfinance sector in Ghana consists of several stakeholders and structures that support the effective functioning of the sector. The key stakeholders and structures include:

1. The main MFIs, consisting of:
 - i. Rural and community banks
 - ii. Savings and loans companies
 - iii. Financial NGOs
 - iv. Primary societies of credit union associations (CUAs)

- v. The Susu Collectors Association of GCSCA
 - vi. Development and commercial banks with microfinance programmes and linkages
 - vii. Microinsurance and microleasing services
2. Microfinance apex bodies, namely:
 - i. The Association of Rural Banks (ARB)
 - ii. ARB Apex Bank
 - iii. The Association of Financial NGOs (ASSFIN)
 - iv. The Ghana Co-operative Credit Unions Association (CUA)
 - v. The Ghana Co-operative Susu Collectors Association (GCSCA)
 3. End users:
 - i. Economically active poor who are users of microfinance products and services
 4. Technical service providers:
 - i. Business development service providers to MFIs and their clients
 5. Supporting institutions:
 - i. MASLOC
 - ii. The Ghana Microfinance Institutions Network (GHAMFIN)
 - iii. Development partners and international NGOs
 - iv. Universities and training and research institutions
 6. Government of Ghana institutions:
 - i. Ministry of Finance and Economic Planning
 - ii. Ministries, departments and agencies and metropolitan, municipal and district assemblies
 - iii. The Bank of Ghana

3.2 Impact Evaluation

According to the Karlan and Goldberg (2007, p.1), impact evaluation can be used either to estimate the impact of an entire programme or to evaluate the effect of a new product or policy. The fundamental question that we attempt to find answers to in either scenario is the same: “How are the lives of the participants different relative to how they would have been had the programme, product, service or policy not been implemented?” The first part of that question (how are the lives of the participants) is the easy part. However, the second part (how their lives

would have been had the policy *not* been implemented) is not, as it requires measuring the counterfactual (Karlan and Goldberg 2007, p.1). This is difficult because it is practically less probable to identify a counterfactual as opposed to the treatment group, which will mimic both the observable and unobservable characteristics of the treated.

The question of interest for impact evaluation, according to Bauchet and Morduch (2010, p.2), centres on how an intervention makes a difference over and above these kinds of underlying trends and conditions. They further argue that disentangling cause and effect is harder than it might seem at first hand. Thus, the most obvious difficulty is that people can only be in one circumstance at a time. We cannot ever know what would have actually happened to specific individuals had they not in fact participated in a development project or programme.

3.2.1 Review of Microfinance Impact Evaluation Studies

In view of the challenges in identifying the appropriate counterfactual when conducting microfinance impact evaluation studies, considerable debate remains about the effectiveness of microfinance as a tool for poverty reduction (Chowdhury et al., 2004). It is difficult to know the exact characteristics of the people whom microfinance benefits and hence to choose a counterfactual. Sinha (1998, p.3) explains that it is notoriously difficult to measure the impact of microfinance programmes on poverty. She argues that money is fungible and therefore it is difficult to isolate credit impact.

To overcome these challenges, recent microfinance impact evaluation studies have focused on randomized control trials (RCTs) as opposed to non-randomized control studies. Proponents of RCTs argue that non-RCTs suffer from the non-random placement of programmes and self-selection bias. They advance that RCTs are the most rigorous method for microfinance impact evaluation because they ensure that the only difference, in general, between the treated and the counterfactual is access to the programme. Therefore, any difference between the treated and the counterfactual can confidently be attributed to the intervention. However, RCTs do not give complete solutions to the numerous challenges associated with microfinance impact evaluations, since they do not come without limitations. Bauchet and Morduch (2010, p.1) argue that social science is not medical science and hence randomized experiments have limits: they are not always feasible, not always representative and not always focused on the larger questions of

interest. Furthermore, RCTs are expensive and time-consuming. Therefore, regardless of the strides made by RCTs in the field of microfinance impact evaluations, non-RCTs are still relevant. Hence, we shall focus on both RCTs and non-RCTs in the empirical review of microfinance impact evaluation studies to follow.

3.2.2 Empirical findings of some Microfinance Impact Evaluation Studies

3.2.2.1 RCT Studies

In a recent study in Hyderabad, India, Banerjee et al. (2015) used an RCT approach to evaluate a group-lending microcredit program by a lender to 52 randomly selected neighborhoods. The programme led to an 8.4 percentage points increase in take-up of microcredit. They observed that investments and profits in pre-existing businesses went up and consumption of durable goods also increased. Additionally, expenditures on temptation goods such as alcohol decreased. However, they found no discernible impact on measures of health, education and female empowerment.

Similarly, Karlan and Zinman (2010) estimated the effects of expanding access to consumer credit in South Africa by randomizing loan approvals to clients identified by the co-operating lender as being marginally creditworthy. In doing so, access to credit increased borrower well-being: incomes increased, food consumption went up and measures of decision making within the household went up, as did community status and overall optimism. In a similar study in the Philippines in 2011 by the same authors, they observed that borrowing increased in the treatment group relative to the comparison group. Furthermore, microloans increased the ability to cope with risk, strengthened community ties and increased access to informal credit. However, the number of business activities and employees in the treatment group decreased relative to that of the comparison group, and subjective well-being also declined slightly.

Another study by Crépon et al. (2011) evaluated the impact of access to credit in rural areas of Morocco by randomizing the placement of new Al-Amana MFI branches; the authors found no significant impact on measures of health, education and female empowerment. Furthermore, it was observed that microcredit had no impact on non-agricultural businesses. However, for individuals with existing farming activities, access to credit increased the volume of activity. Similarly, individuals with an existing business at the start of the study reduced their

consumption and considerably increased their savings. For those without prior business activities, their consumption increased.

3.2.2.2 Non-RCT Studies

Two of the most-cited non-RCT studies are Pitt and Khandker (1998) and Khandker (2005). Applying a quasi-experimental design, Pitt and Khandker (1998) controlled for self-selection and non-random programme placement bias to estimate the impact of participation by gender in Grameen Bank and two other group-based microcredit programmes in Bangladesh. Impact was estimated on labour supply, schooling, household expenditures and assets. They found that microcredit had larger significant impact on poor households in Bangladesh when programme participants are women. Similarly Khandker (2005) examined the effect of microfinance on poverty reduction at both the participant and the aggregate levels using panel data from Bangladesh. He found that access to microfinance reduces poverty especially among female participants and also at the village level.

Chowdhury and Bhuiya (2004, p.377) also assessed the impact of a BRAC poverty alleviation programme from a “human well-being” perspective, examining seven dimensions: increased income, improved women’s lives, control over fertility, sustainable environment, decreased mortality, decreased morbidity and increased nutritional status. The project also included the provision of microfinance and the training of clients on human and legal rights. The authors note that the project led to better child survival rates, higher nutritional status, improvement in the basic level of education and increased networking in the community. They also observed that children of BRAC clients suffered from far less protein energy malnutrition than children of non-members. Furthermore, the educational performance of BRAC members’ children was also higher than that of children in non-BRAC households. BRAC member households also spent significantly more on the consumption of food items than poor non-members did, and their per capita calorie intake was similarly significantly higher.

A study by Bebczuk and Haimovich (2007) in some Latin American countries examined the impact of credit on beneficiaries with a household survey. Findings from the study showed an increase in household income and education. It was further noted that the probability of completing secondary school was on average higher than the increase for primary school was,

with the results varying from country to country. However, they found no evidence on gender equality and women's empowerment.

A similar study of six microfinance programmes in Africa also found substantial qualitative evidence that targeted microcredit for the poor and for poor women in particular enhanced human capital through increased expenditure on consumption, education and related improvements in health. In all the cases studied, microcredit was found to have a positive impact on measures of welfare, with female beneficiaries tending to attach a higher value to the concept of well-being (Mosley, 2002; Arora and Singhal, 2013).

In his impact assessment of microfinance interventions in Ghana and South Africa, Afrane (2002) found that microfinance programmes resulted in significant improvements in terms of increased business incomes, improved access to life-enhancing facilities and the empowerment of people, particularly women. Similarly, Adjei et al. (2009) used Snapi Aba Trust of Ghana as a case to examine the role of microfinance in asset building and poverty reduction. They established that beneficiaries could purchase durables, provide better education to their children and cater for the health care expenses of their households. They also pointed out that participation in the microfinance programme enabled clients to own savings deposits and to become members of welfare schemes that provided insurance for them to pay off debts in times of ill health or death.

In addition, Coleman (1999) found that there was no significant impact in regard to access to microcredit in improving household wealth in a sample of households from north-eastern Thailand. However, a similar study by Coleman (2006) also in north-eastern Thailand found a positive effect on household welfare among committee members who were granted access to financing when the sample was categorized into general beneficiaries and committee members. It was observed that the insignificant impact was limited to the general beneficiaries.

3.2.3 Summary of Empirical Studies

Given the plethora of mixed findings and the diverse literature, it is apparent that practitioners in the field of microfinance are locked in a considerable debate as to the direction of the impact and effectiveness of microfinance as a policy instrument in the fight against poverty. Hence, caution should be exercised in reaching general conclusions on the impact and effectiveness of

microfinance. In such conclusions, it is necessary to consider the different country, regional, community or village setting, as well as the peculiar characteristics of the poor and vulnerable, since they may differ in many contexts. Sachs (2009) and Adams and Bartholomew (2010) argue that microfinance may not be appropriate in every situation and advise against a one-size-fits-all strategy in the use of microfinance in poverty alleviation. Furthermore, they point out that poor governance, bad infrastructure and dispersed populations in the rural areas might limit the potential benefits of microfinance in Africa. Similarly, Mahajan (2005, pp.2-3), a social entrepreneur and chairman of BASIX⁷, also cited by Chowdhury (2009, p.2), states:

“Microcredit is a necessary but not a sufficient condition for micro-enterprise promotion. Other inputs are required, such as identification of livelihood opportunities, selection and motivation of the micro-entrepreneurs, business and technical training, establishing of market linkages for inputs and outputs, common infrastructure and sometimes regulatory approvals. In the absence of these, microcredit by itself, works only for a limited familiar set of activities – small farming, livestock rearing and petty trading, and those activities where market linkages are in place”.

Pollin and Feffer (2007) add:

“Micro enterprises run by poor people cannot be broadly successful simply because they have increased opportunities to borrow money. For large numbers of micro enterprises to be successful, they also need access to decent roads and affordable means of moving their products to markets. They need marketing support to reach customers.”

Therefore, making general conclusions on the impact of microfinance may be misleading; the impact of microfinance should be considered as context specific.

This study shall therefore refrain from reaching general conclusions on the impact of microfinance but shall seek to add to the existing knowledge to provide further understanding among stakeholders and practitioners by examining the effect of credit on three main economic variables (income, savings and basic household assets) of beneficiary households in the Dormaa Municipality in the Brong Ahafo Region of Ghana.

⁷ BASIX is a livelihood promotion institution that was established in 1996 in India. It works with over 3.5 million customers, over 90% being rural poor households and about 10% urban slum dwellers, with the objective of providing a comprehensive set of livelihood promotion services to rural poor households.

CHAPTER 4

METHODOLOGY

This chapter explains the conceptual framework and the methodology employed in arriving at the findings of the study. The estimation model and survey design are thoroughly discussed, pointing out the main econometric problems and the corrective measures applied. The chapter further discusses the sources of data and gives a brief description of all the variables used in the study.

4.1 Conceptual Framework of Impact Evaluation

The conceptual framework in programme evaluation is very essential in impact assessment studies. It seeks to explain the underlying transmission mechanism of an intervention from inputs to outputs: the cause and effect of an intervention. Hulme (2000, p.4) refers to three main elements as crucial to any conceptual framework for impact assessment studies:

- i. A model of the impact chain that the study is to examine
- ii. The specification of the unit(s), or levels, at which impacts are assessed
- iii. The specification of the types of impact that are to be assessed

Having in mind these crucial elements, the impact chain model ascribed to Hulme (2000) is adapted to conceptualize the impact of microfinance on poverty reduction in this study. According to Hulme (2000), microfinance assumes that an intervention will modify human behaviours and practices in ways that result in the attainment of expected outcomes. To understand the impact of an intervention such as microfinance (as is the case in this study), the difference in the values of key variables between the outcomes on beneficiaries (individuals, enterprises, households, populations, policymakers, etc.) from the intervention is measured against the values of those variables that would have occurred had there been no intervention. Thus, the outcome of the beneficiaries is measured against the counterfactual. However, this poses methodological problems, since in reality it is impossible to observe beneficiaries in treated (experiences the intervention) and untreated (does not experience the intervention) states at the same time. Sebstad et al. (1995) and Hulme (2000) argue that all such modifications are

influenced by mediating processes (specific characteristics of the beneficiary and of the economic, physical, social and political environment) that influence both behavioural changes and the outcomes in ways that are difficult to predict. Taking into account the concerns raised by these authors, the impact chain model is presented in Figure 3.1 below to explain further.

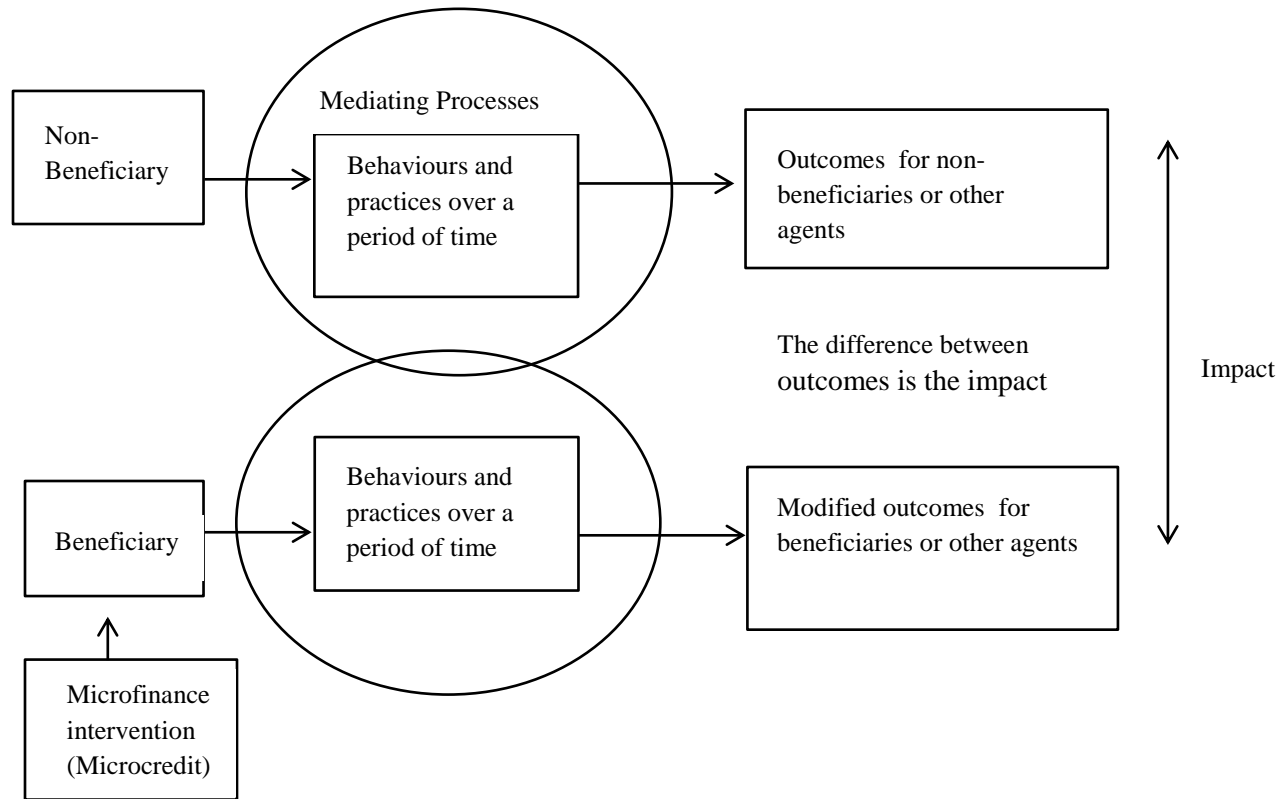


Figure 4.1 Impact chain model

Source: Hulme (2000)

To explain further the impact chain model in predicting the impact of microfinance intervention, we follow the example of Ghalib (2009) and assume that the model employs two groups residing in the same or similar communities with identical economic and social characteristics. The only difference between the two groups is the administration of the microfinance intervention to the treated group, while participants of the control group are not administered the microfinance intervention. After a specified period of time, participants of the treated group (those granted microcredit) *ceteris paribus* start to show signs of behaviour modifications in the key variables. Contrary to the control group, participants will have no modifications in behaviour *ceteris*

paribus. The variables of interest for this study are income, savings and basic household assets acquisition. Hence, the treated are expected to demonstrate improved behavioural signs in these key variables. Hulme (2000) argues that such modifications in the behaviour of beneficiaries will lead to higher economic security, which in turn will translate into changes in morbidity and mortality rates, educational and skills levels, and future economic and social opportunities. Since the impact and transmission chains are complicated and may perhaps lead to both desired and undesired effects, we are usually confronted with a wide range of choices about which impacts to investigate. It is therefore necessary to distinguish between the impacts and the choice on which we shall focus. Hulme (2000) points out two main approaches for the purposes of microfinance studies and convenience sake. They are the intended beneficiary and intermediary beneficiary approaches.

The intended beneficiary approach of impact assessment usually focuses on the end results of policy interventions and programmes on the lives of beneficiaries. It requires that any observed change in the lives of the beneficiaries (the poor) needs to be measured and attributed to the programme or policy intervention. According to Johnson (1998) microcredit is one of the important financial services of this approach in reaching out to the poor with opportunities to improve on their livelihoods and reduce their vulnerability.

The intermediary approach focuses purely on the beginning of the chain and in particular on changes in the microfinance institution and its operations (Hulme, 2000). This approach is concerned with the institutional sustainability (both operational and financial) and outreach to the poor and vulnerable in society. If policy interventions have high outreach and have opened up the financial market in a sustainable manner, then the intervention is said to be beneficial.

Given the few assumptions under the intended beneficiary approach and its suitability in distinguishing between who benefits and how, we shall focus on this approach for the study. Furthermore, the household shall be used as the unit of analysis due to its superior merits over other units, such as the individual, enterprise and community. Hulme (2000) argues that the household unit is superior because it is relatively easy to identify, permits the appreciation of livelihood impacts and allows for the appreciation of links between different enterprises and consumption levels.

The impact chain model presented above can also be expressed algebraically. Following Ghalib (2009), we consider four variables to set up the algebraic equations for the model:

a = existing conditions of households prior to the microcredit intervention

δ = dummy variable, which takes the value of 0 if no microcredit (treatment) is given to the household and 1 if microcredit (treatment) is given to the household

x = the modifications in behaviour (the variables of interest)

y = the microfinance impact

Since the microfinance impact will be equal to the prior conditions of the treated (or untreated) household plus any modifications that have taken place in the economic circumstances of the household subsequent to programme intervention, the following equation can be derived:

$$y = a + \delta x \dots\dots\dots (4.1)$$

This equation will now be tested under two possible scenarios:

Scenario 1: *no microcredit administered – case of the untreated group:*

$$\begin{aligned} \delta &= 0 \\ y &= a + 0 x \\ y &= a \dots\dots\dots (4.2) \end{aligned}$$

All things being equal, the conditions of the household remain the same with no change, due to no treatment taking place.

Scenario 2: *microcredit administered – case of the treated group:*

$$\begin{aligned} \delta &= 1 \\ y &= a + 1 x \\ y &= a + x \dots\dots\dots (4.3) \end{aligned}$$

The change (x) occurs in the economic circumstances of the treated due to treatment, over and above their existing conditions (a).

Difference between the two scenarios:

$$\begin{aligned} y &= [a + x] - [a] \\ y &= a + x - a \\ y &= x \dots\dots\dots (4.4) \end{aligned}$$

The difference between the two scenarios demonstrates that the treated group benefits by an amount equal to x due to the microcredit intervention, which shows the change in economic circumstances. In contrast, the untreated group remains the same in terms of economic conditions, with no impact due to no treatment taking place. The diagram below provides a graphical presentation of the model. The variables as defined before are used.

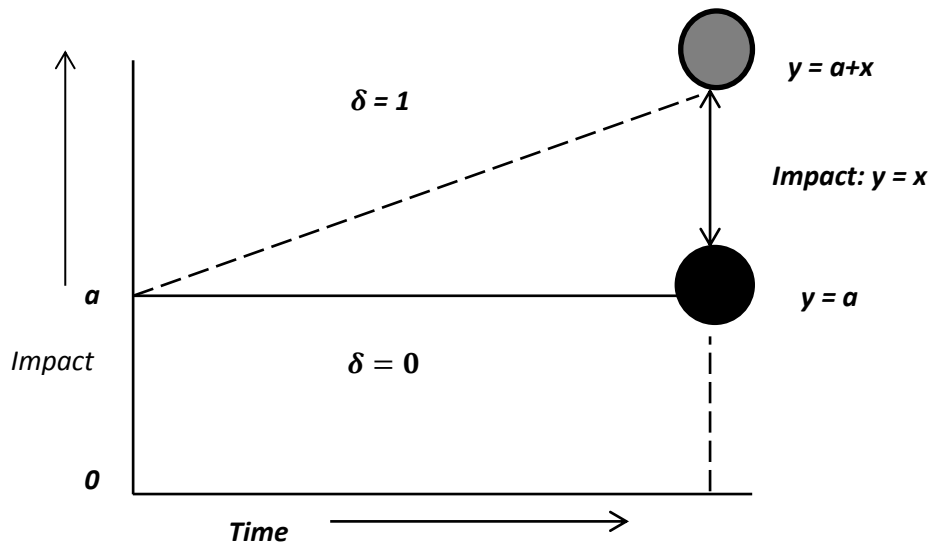


Figure 4.2 Graphical presentation of the impact chain model

Source: Adapted from Ghalib (2009)

The vertical axis measures the impact of the microfinance intervention on the treated vis-à-vis the untreated after a given period of time. The horizontal axis measures the timeframe for such change to take place.

4.2 Estimation Strategy

In line with the conceptual framework, we shall proceed to estimate the impact of microfinance (DATCCU) on poverty reduction in the Dormaa Municipality, focusing on three main variables at the household level. The key variables to be considered in this causal analysis are household income, savings and acquisition of basic household assets. To be able to establish such a causal relationship requires that we disentangle the impact of microfinance from all observed and unobserved effects that affect the outcome variables of interest (household income, household

assets acquisition and household savings). Since the decision to participate in a microfinance programme is endogenous and the placement of microfinance programmes is usually non-random, we end up with biased estimates if these estimation problems are not taken into consideration. Coleman (1999) explains that the potential bias arising from self-selection and the non-random placement of programmes can be well understood by considering the following equations:

$$B_{ij} = X_{ij}\alpha_B + C_j\beta_B + \varepsilon_{ij}, \quad (4.5)$$

$$Y_{ij} = X_{ij}\alpha_Y + C_j\beta_Y + B_{ij}\delta_Y + \mu_{ij}, \quad (4.6)$$

where B_{ij} is the amount borrowed from the MFI by household i in community j ; X_{ij} is a vector of household characteristics; C_j is a vector of community characteristics; Y_{ij} is an outcome on which we want to measure impact; α_B , β_B , α_Y , β_Y and δ_Y are parameters to be estimated; and ε_{ij} and μ_{ij} are errors representing unmeasured household and community characteristics that determine borrowing and outcomes, respectively. Importantly, δ_Y is the primary parameter of interest because it measures the impact of the microfinance on the outcome Y_{ij} .

These two equation systems set up the empirical model for the study. However, as noted earlier, this is often fraught with bias arising from potential self-selection and endogenous programme placement. Maddala (1983) and Coleman (1999) both point out that econometric estimation of these equation systems lends itself to biased parameter estimates if ε_{ij} and μ_{ij} are correlated and this correlation is not accounted for or taken into consideration. Two main sources give rise to the correlation between ε_{ij} and μ_{ij} as pointed out by Coleman (1999). They are:

- i. Self-selection into the microfinance programme and the subsequent decision on how much to borrow
- ii. Non-random microfinance programme placement in the communities

The bias arising from self-selection into microfinance programmes and the further decision on how much to borrow can be appreciated given a sample of households obtained from communities with microfinance only. The possibility of ε_{ij} and μ_{ij} from such a sample being

correlated is certainly high, since selection or participation in microfinance programmes and the subsequent decision on how much to borrow are not random. Thus, some members of the microfinance programme might have self-selected to be members (while others have not) and have further decided on how much to borrow based on certain procedures of the MFI. To explain further, Coleman (1999) argues that participation in microfinance programmes and the subsequent decision on how much to borrow would be influenced by a household's entrepreneurial skills. Therefore, given such a sample, unmeasured entrepreneurial endowments will impact on the estimated coefficients of the variables of interest. Similarly, this bias can also be observed if more wealthy households participate in the microfinance programme more than households with moderate wealth do, and vice versa. Given this scenario, the more wealthy households might feel stigmatized associating with the households with moderate wealth, giving rise to a negative correlation between ε_{ij} and μ_{ij} and a downward effect on estimated coefficients, and vice versa.

The second problem usually encountered in the estimation of impact in most studies is the non-random placement of programmes. According to Pitt and Khandker (1998), the identification of microfinance impact programmes by comparing a sample of households in communities with and without the programme in a treatment and control framework without accounting for the non-random placement of programmes usually leads to biased estimates of programme impact. This occurs if programme placements are determined based on unmeasured community characteristics, μ_{ij} . Hence, it is probable for ε_{ij} and μ_{ij} to be correlated due to unmeasured community characteristics. To illustrate this, Coleman (1999) explains that, some communities are considered more entrepreneurial, business-oriented and with more dynamic leaders which might influence the lifestyles of other inhabitants in these communities. Similarly, some communities are simply poorer (for instance, living in natural-disaster-prone areas). Therefore if NGOs and MFIs use these criteria in programme placement decisions, programme placement will not be random. In such a scenario, ε_{ij} and μ_{ij} will certainly be correlated.

In controlling for these estimation problems, which lead to the correlation of ε_{ij} and μ_{ij} , three standard approaches are used. These approaches have been discussed thoroughly by Moffitt (1991), Pitt and Khandker (1998) and Coleman (1999). According to these authors, the first

approach requires the use of instrumental variables such that the identifying instruments would be variables that are included as explanatory variables in equation (4.5) but not in equation (4.6). The difficulty with this approach is the identification of variables that will serve as good instruments to determine participation in microfinance programmes and the subsequent decision to borrow an amount B_{ij} and at the same time independent of the outcome variable Y_{ij} .

The second approach is the use of panel data (before and after data) in the absence of any good instruments. Using panel data will therefore account for differences in households in the outcome variable Y_{ij} before and after programme availability. However, the major challenge with the use of panel data is the practical difficulty and the cost in obtaining such data (Coleman, 1999).

The third approach is to presume an error distribution of the outcome variables without treatment. Given that the errors are normally distributed, which we usually assume, then the effect of treatment is determined from the deviations from normality from the outcome of the treated. However, the use of this approach is also crucial due to the strong assumptions of normality about the error distributions. Firstly, one has no good basis to assume that the errors are normally distributed. Secondly, the results are highly sensitive to the assumptions. Thirdly, if both the treatment and outcome are measured as binary or censored variables, identification of the treatment effect is sometimes not possible (Maddala, 1983; Moffitt, 1991; Pitt and Khandker, 1998; Coleman, 1999).

4.3 Alternative Specification

Taking into consideration the above econometric estimation problems in measuring programme impact, we shall use an alternative and simple estimation model with less-cumbersome econometric techniques, as proposed by Coleman (1999). One essential characteristic of most MFIs that can be utilized in the measurement of microfinance impact is their start-up processes. Usually, an MFI begins in a small community and gradually expands into other nearby areas. Exploiting this characteristic, we employ a quasi-experiment in a treatment and control framework to carry out this study. A unique survey was conducted to obtain cross-sectional data in two communities (control communities) identified by DATCCU, where members were made to self-select and would soon be eligible to access DATCCU credit. At the same time, one community (the treatment community), where members were already eligible to borrow, was

also selected. The beneficiaries of DATCCU credit were then compared with non-beneficiaries in both treatment and control communities. In both treatment and control communities, both members and non-members were surveyed, and we assumed that they possessed common unobservable characteristics, such as entrepreneurship skills, gender attitudes, etc. Given this unique survey design, which is discussed further in the next section, equations (4.5) and (4.6) can be rewritten into a single impact equation as follows:

$$Y_{ij} = X_{ij}\alpha + C_j\beta + DM_{ij}\gamma + T_{ij}\delta + \mu_{ij}, \quad (4.7)$$

The *a priori* expectation is that $\alpha, \beta, \gamma, \delta > 0$, where Y_{ij} , X_{ij} and C_j are defined as before; DM_{ij} a membership dummy variable equal to 1 if household ij self-selects to be a member of DATCCU, and 0 otherwise; and T_{ij} a dummy variable equal to 1 if a self-selected member has already had access to a DATCCU loan, and 0 otherwise. The membership dummy variable DM_{ij} can be thought of as a proxy for the unobservable characteristics that led households to self-select into DATCCU. Therefore, it captures the unobserved variables that cause ε_{ij} and μ_{ij} to be correlated across households. The variable T_{ij} measures the availability of DATCCU loans to members who have self-selected, which, unlike the amount borrowed, is exogenous to the household. The variable δ in this specification measures the average impact of DATCCU credit on the outcome Y_{ij} .

Given the model specified in equation (4.7), any unmeasured household attributes are taken into consideration by the membership dummy variable DM_{ij} . Hence, the correlation as a result of self-selection between T_{ij} and μ_{ij} is removed. Furthermore, if the order in which communities receive DATCCU microfinance is random in regard to unmeasured community attributes, then efficient and unbiased estimates can be obtained with C_j as a vector of specific community attributes affecting the outcome Y_{ij} . However, biased estimates of the programme impact would be obtained if specific community attributes are used as regressors in communities that receive DATCCU microfinance in a non-random order in regard to unmeasured community attributes. Coleman (1999) further explains that this bias varies partially from the non-random programme placement discussed above, since control communities are also programme communities, despite the fact that they are not yet on treatment or are not yet eligible for any loans. Therefore, non-

random programme placement does not pose any threat in undermining the validity of the programme impact. Explaining further, Coleman (1999) adds that if the order of microfinance placement is not random, T_{ij} and μ_{ij} would be correlated and would therefore affect the programme impact δ . For instance, if more-proactive or -dynamic communities are considered for placement before less-proactive or -dynamic communities are, then the programme impact δ would be biased due to a positive correlation between T_{ij} and μ_{ij} . One approach to eliminate this bias is community fixed effects estimation. It controls the community-specific component of the error μ_{ij} as a parameter estimate (Pitt and Khandker, 1998; Coleman, 1999). However, if the order of microfinance (DATCCU) placement is random, then village fixed effects estimation is still unbiased but less efficient than using specific village characteristics as regressors.

It should be noted that in the final estimation stage used by Coleman (1999), he replaced the treatment dummy T_{ij} with the number of years the microfinance had operated in the particular village; however, we maintain T_{ij} in this study for convenience sake. Maintaining T_{ij} estimates the programme impact, just like replacing it with the number of years the MFI has operated in the community. The only distinction is that the latter further predicts the impact based on each additional year of programme availability. Hence, we shall continue to use T_{ij} instead, since we are not interested in estimating the programme impact for each additional year of programme availability. Finally, we shall estimate the impact of the programme with simple ordinary least square (OLS) technique, since our data is uncensored. However, as pointed out by Coleman (1999), the Tobit technique would be more appropriate if our data were censored.

4.4 Survey Design

The study used a cross-sectional data to estimate the impact of microfinance on poverty reduction in Dormaa Municipality. A quasi-experiment was conducted that compared beneficiary households to non-beneficiary households of the DATCCU microcredit scheme in the Dormaa Municipality. A two-stage sampling strategy was used to survey 140 households. In the first stage, DATCCU was purposefully selected for the study due to its wide coverage and long duration of operation in the municipality. Furthermore, purposive sampling was used to select Dormaa Ahenkro (the administrative capital of the municipality) and two nearby communities (Koraaso and Kofiasuaa) for the survey. Since DATCCU has only one branch located in the

capital (Dormaa Ahenkro), it was used as the treatment community. The two nearby communities (Koraaso and Kofiasuaa) were used as the control communities. These two communities were selected because DATCCU does not have branches there. However, it has extended its operations to the communities by registering new members who are yet to receive DATCCU loans and other services. These members were not eligible for loans because, according to DATCCU policy, new members are allowed credit only after six months of membership. In addition, the two communities were selected because they share similar economic, social and cultural characteristics with one another and with the treatment community as well. Therefore, they provide good treatment and control communities comparable to one another for the study.

In the second stage of the sampling strategy, a random sampling approach was used to survey both member households and non-member households in the treatment and control communities. Members were randomly drawn from the customer register of DATCCU with the assistance of some DATCCU staff. For non-members of DATCCU, the community register was obtained from the Municipal Assembly representative member of the communities, and a random draw was conducted from the list of all households on the register to obtain the required sample. In all, 140 households were surveyed, but 31 of them were dropped out during the screening process. Surveys that were found to be illogical and incompletely answered were left out after a second visit had been made. In the end, 109 surveys were considered and used for the final analysis.

In the treatment community, 57 members and 10 non-members of DATCCU were surveyed. All 57 members had borrowed and used at least one loan from DATCCU in the last three years and were therefore used as the control group. The remaining 10 households were non-members of DATCCU and hence were not eligible to benefit from any of the loan schemes of DATCCU and were therefore included as part of the control group, irrespective of the fact that they were in the treatment community. In the control communities, 42 households were surveyed. This included 22 new members and 20 non-members of DATCCU. Since DATCCU operates a policy of only giving loans to those who have been members for six months or more, these 22 new members were not eligible for loans because their memberships were less than six months old. Hence, all 42 households (both members and non-members) surveyed in the control communities were used

as a control group. Adding these 42 households in the control communities to the 10 non-member households in the treatment community gives a total of 52 households in the control group.

Out of the 109 households used for the final analysis, there were 44 female-headed households and 65 male-headed households. The survey also collected a wide range of information on the demographic (age, sex and marital status) and socio-economic data (education, occupation, annual income, household assets and savings) of both the treatment and control groups.

4.5 Description of Variables

The table below gives a detailed description of all the variables used in this study. The study made use of both binary and continuous variables. Below the table is a brief explanation of how data was obtained on our three key variables of interest (income, savings and acquisition of basic household assets).

Table 4.1 List of Variables

Variable Name	Variable Type	DESCRIPTION
<i>Outcome Variable</i>		
<i>Annual income</i>	Continuous	Total annual income of the household measured in Ghanaian cedis (Gh¢)
<i>Annual savings</i>	Continuous	Total annual savings of the household measured in Ghanaian cedis (Gh¢)
<i>Total assets acquired</i>	Continuous	Total value of the basic household assets acquired by the household measured in Ghanaian cedis (Gh¢)
<i>Household Characteristics</i>		
<i>Gender of HH⁸</i>	Binary	Gender of household head (1=male; 0=female)
<i>Age of HH</i>	Continuous	Age of household head measured in years
<i>Education of HH</i>	Continuous	Education of household head measured in years
<i>Occupation of HH</i>	Binary	Occupation of household head (1=public sector; 0=private sector)
<i>Land status of HH</i>	Binary	Land status of household head (1=landed; 0=landless)
<i>Marital status of HH</i>	Binary	Marital status of household head (1=married; 0=unmarried)
<i>Household size</i>	Continuous	Household size measured in number of people
<i>Extended relatives</i>	Continuous	Extended relatives living in the community measured in number of people
<i>Community Characteristics</i>		
<i>Location</i>	Binary	Location of the community (1=urban; 0=rural)
<i>DATCCU Membership Status</i>		
<i>Membership</i>	Binary	DATCCU membership status of household head (1=member; 0=non-member)
<i>Credit</i>	Binary	Credit status of household head (credit beneficiary; 0=non-credit beneficiary)

⁸ Household head.

Annual income of the household was computed from the household's income earnings from productive activities and transfers by taking into consideration four main components in the measurement of income: (i) wage income from labour services; (ii) rental income from the supply of land, capital or other assets; (iii) self-employment income; and (iv) current transfers from government or non-government agencies or other households. Other non-monetary incomes were valued using the price list of the basket of goods obtained by the Ghana Statistical Service in the computation of its monthly consumer price index.

Household savings was computed from the total savings of all members of the household in cash deposit with DATCCU. All the cash savings and deposits of the household on daily, weekly and monthly bases were compiled to arrive at the total annual savings of the household with the assistance of the head and other members of the household.

The total value of the assets acquired by the household was computed by first selecting a list of basic household assets identified by GLSS 6 that are commonly used by the average Ghanaian. Assets included in the list are: radio and cassette players, televisions, refrigerators, mobile phones, sewing machines, bicycles, motorbikes, sofas, cooking utensils and jewellery. The value of the assets was computed using the prices at the time of purchase given by the household head or any other member of the household with such information. In cases where the value of the assets could not be provided by the households, the price list used by the Ghana Statistical Service in its statistical reports was used as a proxy. All prices and asset values were adjusted to 2015 prices to account for inflation. Furthermore, all basic household assets acquired more than three years ago were excluded from the list because the maximum repayment period of all types of loans was 36 months.

CHAPTER 5

RESULTS AND DISCUSSION

This chapter presents the results and discussion of the study. Three key variables are considered in the discussions that follow: annual income, annual savings and the total value of assets acquired by beneficiaries and non-beneficiaries of the DATCCU loan scheme. Table 5.1 gives the descriptive statistics of all the variables used in the study, providing details on the number of observations, means, standard deviations, and minimum and maximum outcomes. This is followed by the regression results of the impact of the DATCCU credit scheme on the three key variables (income, savings and total assets), which are presented in Tables 5.2–5.4. Each table is followed by a detailed discussion of the results, with emphasis on income, savings and the total value of basic household assets acquired. Furthermore, some household and community characteristics are also briefly considered in the discussions.

5.1 Summary Statistics

The summary statistics of all the variables considered in the final analysis are presented in Table 5.1 below. A total of 15 variables comprising 109 observations each were used in the study.

Table 5.1 Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Annual income	109	5991.08	2613.99	1800	12300
Annual savings	109	764.44	682.90	45	4950
Total assets acquired	109	1835.12	1083.70	215	5213
Credit dummy (1=credit beneficiary)	109	0.54	0.500	0	1
Membership dummy (1=member)	109	0.73	0.44	0	1
Education of HH (in years)	109	9.50	4.18	0	16
Household size (in people)	109	3.28	1.41	1	7
Age of HH (in years)	109	36.66	9.04	25	63
Extended relatives (in people)	109	5.06	3.06	0	12
Gender of HH (1=male)	109	0.61	0.49	0	1
Land status of HH (1=landed)	109	0.59	0.49	0	1
Location of community (1=urban)	109	0.63	0.48	0	1
Occupation of HH (1=public sector)	109	0.53	0.50	0	1
Marital status of HH (1=married)	109	0.71	0.46	0	1
Amount borrowed (in Gh¢)	109	681.19	789.54	0	3000

Of the 15 variables used, 7 were binary and the remaining 8 were continuous. All variables with 0 and 1 as their respective minimum and maximum values were binary. Our dependent variables were annual income, annual savings and the total value of basic household assets acquired. They were all measured in Ghanaian cedis (Gh¢). From the summary statistics⁹, we find that the annual household income per capita for the sample was Gh¢5,991, varying from a minimum of Gh¢1,800 to a maximum of Gh¢12,300. The maximum annual household savings was Gh¢4,950, with a minimum of Gh¢45 and average annual household savings of Gh¢764.

Furthermore, we observe that the average value of total assets acquired was Gh¢1,835, with a maximum value of Gh¢5,213. The minimum value of total assets acquired was Gh¢215. We further note that 54% of the respondents had benefitted from the DATCCU loan scheme. Similarly 73% of the respondents were members of DATCCU. The average number of years of education of household heads was 9.5, with 0 and 16 as the respective minimum and maximum. The other variables were household size, age of household head and the number of extended relatives living in the community. The household size varied from 1 to 7 people, with 3 people as the average. The oldest household head from the sample was 63 years of age; the youngest was 25 years old, with an average of 37 years. It was also noted that, on average, each household had 5 extended relatives residing in the same community, varying from 0 to 12 people. The sample also indicated that 61% of all households surveyed had a male household head, 59% of all households owned land, 63% lived in the municipal capital (urban area), 53% of household heads worked in the public sector and 71% of household heads were married. The average credit size of the scheme was Gh¢681, and the maximum was Gh¢3,000.

With the average annual household income of Gh¢5,991 and 3 people per household, it can be deduced that household income per capita is approximately Gh¢1,997, which is equivalent to US\$518.30¹⁰ in 2015 constant dollars (Bank of Ghana, 2015). We find that the new absolute poverty line: Gh¢1,314 (US\$667.95) in 2013 constant (cedis and dollars) prices adjusts to Gh¢1,789 (US\$682.87) in 2015 constant (cedis and dollar) prices respectively (US Bureau of Labor Statistics, 2015; Bank of Ghana, 2015). When the household income per capita

⁹ All values from the summary statistics and the OLS tables to follow have been rounded to the nearest whole number in all the discussions.

¹⁰ US\$1 is equivalent to Gh¢3.583 (Bank of Ghana, 04.05.2015)

(GhC1,997) is compared with the adjusted poverty line (GhC1,789) expressed in 2015 cedi prices, we find that the household income per capita is above the poverty line. This gives the impression that the sample considered for the study is not poor. However, this is not the case when the same analysis is conducted using the dollar as the base currency. Using the dollar, we find that the household income per capita (US\$518.30) in 2015 dollars is below the adjusted poverty line (US\$682.87) expressed in 2015 dollars and the nominal value in 2013 dollars (US\$667.95). In this scenario, we observe that household income per capita is below the poverty. Given the volatile nature of the Ghanaian cedi, the US dollar is preferred for such an analysis since it is more stable than the Ghanaian cedi.

Furthermore, as noted earlier in chapter two, the Ghanaian cedi in 2014 depreciated 31.2%, 29.3% and 23.6% against the US dollar, the pound sterling and the euro, respectively. Therefore using it as a base currency for comparison between different time periods will be bias. Though not reported in the summary statistics it was observed that 52.3% of the households surveyed have annual incomes below the sample average.

5.2 Results of Ordinary Least Square Estimates

The OLS estimates of the DATCCU credit impact on income, savings and the total assets acquired are presented in the tables below. Reported in the tables are the regression coefficients, the standard errors and the T-statistics.

Table 5.2 OLS Estimates of DATCCU Credit Impact on Annual Household Income

Independent Variables	Dependent Variable: Annual Income		
	Coef.	Std. Err.	T-statistic
Credit dummy (1=credit beneficiary)	-383.658	717.7721	-0.53
Membership dummy (1=member)	-431.3	514.9141	-0.84
Education of HH (in years)	96.98442	47.92735	2.02**
Household size (in people)	10.18595	238.8097	0.04
Age of HH (in years)	-20.9455	34.94967	-0.6
Extended relatives (in people)	-128.493	65.78223	-1.95*
Gender of HH (1=male)	412.4919	375.4348	1.1
Land status of HH (1=landed)	-816.935	380.5102	-2.15**
Location of community (1=urban)	106.2102	632.3418	0.17
Occupation of HH (1=public sector)	2997.299	406.3656	7.38***
Marital status of HH (1=married)	-467.004	485.6679	-0.96
Constant	5875.23	1038.907	5.66***
Number of observations=109	F(11,97)=11.82		
R-squared=0.5728	Prob.> F=0.0000		
Adj. R-squared=0.5243			

*significant at 0.10

**significant at 0.05

***significant at 0.01

From Table 5.2, we find that the reported R-squared is approximately 0.57. This implies that all the independent variables put together explain 57% of the variation in the annual incomes of households, and the corresponding F-statistic is highly significant at the 1% significance level.

Considering the credit and membership dummies, we note that both are insignificant at all conventional levels of significance. The implication is that there is no evidence of a difference in the average annual incomes of beneficiary households and non-beneficiary households of the

DATCCU credit scheme, as well as in the incomes of members and non-members of DATCCU. Furthermore, we find that the coefficients of household size, age of household head, gender status of household head, location of community and marital status of household head all have no significant effect on average annual income.

On the other hand, we observe that education of household head, extended relatives, land status of household head, occupation of household head and the constant term are all significant at various conventional levels of significance. Both education and occupation of household head carry positive signs and are significant at 5% and 1%, respectively. This implies that, all else being equal, each additional year of education of the household head on average leads to an increase of GhC97 approximately in annual income. Similarly, the coefficient of the occupation of the household head indicates that household heads in the public sector on average earn GhC2,997 more than those in the private sector. This could be due to the steady flow of income in the public sector as against the seasonal and unexpected fluctuations in the output of the private sector in the municipality and in Ghana in general. Extended relatives and the land status of the household head are both significant at 10% and 5%, respectively, but with negative signs. The negative coefficient of extended relatives suggests that, on average, an increase in the number of extended relatives living in the same community leads to a fall in annual income of the household by GhC129, holding all other things constant. This could be due to the high dependence ratio in the municipality and the greater responsibilities associated with “wealthy” family members in traditional Ghanaian society. Similarly, the negative coefficient of the land status of the household head indicates that, all things being equal, the annual income of landed households is GhC817 less than that of landless households.

Table 5.3 OLS Estimates of the DATCCU Credit Impact on Annual Household Savings

Independent Variables	Dependent Variable: Annual Savings		
	Coef.	Std. Err.	T-statistic
Credit dummy (1=credit beneficiary)	62.33528	225.4795	0.28
Membership dummy (1=member)	-28.1335	161.7541	-0.17
Education of HH (in years)	26.86266	15.0558	1.78*
Household size (in people)	-141.262	75.0192	-1.88*
Age of HH (in years)	11.04688	10.97902	1.01
Extended relatives (in people)	-39.5057	20.6647	-1.91*
Gender of HH (1=male)	157.1485	117.9383	1.33
Land status of HH (1=landed)	-121.556	119.5327	-1.02
Location of community (1=urban)	-8.93145	198.6426	-0.04
Occupation of HH (1=public sector)	483.0472	127.6549	3.78***
Marital status of HH (1=married)	-223.068	152.5667	-1.46
Constant	635.8303	326.3602	1.95*
Number of observations=109	F(11, 97)=5.42		
R-squared=0.3823	Prob.>F=0.0000		
Adj. R-squared=0.3123			

*significant at 0.10

**significant at 0.05

***significant at 0.01

Table 5.3 shows the OLS estimates of the DATCCU credit impact on annual savings. The results indicate that neither membership nor credit granted to beneficiaries of the DATCCU credit scheme have significant impact on annual savings. Though the coefficient of the credit dummy carries a positive sign, as expected, the corresponding T-statistic (0.28) is insignificant at all conventional levels of significance. Like the credit dummy, the T-statistic (-0.17) of the membership dummy is also insignificant at all levels but with a negative sign, going against expectation. Since the coefficients of the membership and credit dummies are insignificant, we fail to reject the hypothesis that there is no difference between the savings levels of participants and non-participants of the DATCCU loan scheme. Similarly, we observe that the variables age of household head, gender of household head, land status of household head, location of community and marital status of household head are all insignificant and thus have no impact on

annual savings.

However, we find that the coefficients of education of household head, household size, extended relatives, occupation of household head and the constant term are all significant at varying significance levels. Education of household head is significant at 10%, with a corresponding T-statistic of 1.78, while occupation of household head is also significant at 1%, with a T-statistic of 3.78. This implies that each additional year of education of the household head leads to an increase in annual savings by GhC27. Similarly, household heads working in the public sector on average save GhC483 more than household heads working in the private sector. Household size and extended relatives are both significant at 10%, but negatively related to annual savings. This indicates that, all things being equal, the annual savings of the household on average decreases with increases in household size and the number of extended relatives by GhC141 and GhC40, respectively. This suggests that increases in household size and the number of extended relatives are associated with more expenditure, which is true in a typical Ghanaian household setting.

We further note that the independent variables jointly explain 38% of the proportion of the variation in annual savings, as indicated by the R-squared value (0.3823) at the bottom of the table. The corresponding F-statistic is highly significant at 1%.

Table 5.4 OLS Estimates of the DATCCU Credit Impact on the Total Value of Basic Household Assets Acquired

Independent Variables	Dependent Variable: Total Assets		
	Coef.	Std. Err.	T-statistic
Credit dummy (1=credit beneficiary)	-479.004	371.6035	-1.29
Membership dummy (1=member)	-87.6536	266.5802	-0.33
Education of HH (in years)	-0.79201	24.81285	-0.03
Household size (in people)	218.2948	123.6361	1.77*
Age of HH (in years)	-34.0911	18.09407	-1.88*
Extended relatives (in people)	51.23219	34.05663	1.5
Gender of HH (1=male)	60.08953	194.3693	0.31
Land status of HH (1=landed)	257.0813	196.9969	1.31
Location of community (1=urban)	394.1695	327.3746	1.2
Occupation of HH (1=public sector)	1043.375	210.3827	4.96***
Marital status of HH (1=married)	-201.059	251.4389	-0.8
Constant	1592.101	537.8609	2.96***
Number of observations=109	F(11, 97)=4.42		
R-squared=0.3338	Prob.> F=0.0000		
Adj. R-squared=0.2582			

*significant at 0.10

**significant at 0.05

***significant at 0.01

Table 5.4 above shows the impact of DATCCU credit and other variables on the total value of basic household assets acquired by beneficiaries and non-beneficiaries. Similar to our previous discussions on annual income and savings, we observe that DATCCU credit has no impact on the value of total assets acquired by beneficiaries. Both the credit and membership dummies are found to have negative signs, suggesting an inverse relationship with the total value of household assets acquired. However the corresponding T-statistics (-1.29 and -0.33, respectively) of both coefficients are insignificant at all conventional levels. Hence, there is not enough evidence of a difference in the value of total assets acquired by beneficiaries and non-beneficiaries of neither the credit scheme nor participation. Other variables found to have no significant impact on the value of total assets acquired included education of household head, extended relatives, gender

of household head, land status of household head, location of community and marital status of household head.

On the other hand, household size, age of household head, occupation of household head and the constant term all have some explanatory power over the value of total assets acquired by households. We note that both household size and occupation of household head are significant at 10% and 1% significance levels, respectively, with a positive effect on the value of total assets acquired. That is, all things being equal, the value of total assets of the household increases by Gh¢218 for each additional member of the household. Similarly, household heads with public-sector employment have Gh¢1,043 more in asset value than household heads working in the private sector do. Age of household head has a negative effect on the value of total assets acquired by the household. The negative coefficient indicates that as the age of the household head increases by one year, the value of total assets acquired by the household decreases by Gh¢34.

Furthermore, the proportion of the total variation in the value of total assets acquired by the households jointly explained by the independent variables is 33%, as indicated by the value of the R-squared at the bottom of the table. The corresponding F-statistic (0.000) is highly significant at 1%.

5.3 Diagnostic Tests

To ensure the robustness of our estimation technique, the Breusch–Pagan test for heteroskedasticity, the Ramsey reset test for functional misspecification and the variance inflation factor (VIF) test for multicollinearity were conducted for all three results.

From the Breusch–Pagan test for heteroskedasticity, which uses the chi-square statistic, we notice that there is no evidence of heteroskedasticity in the models with income and total assets as dependent variables. The estimated chi-square probabilities of 0.11 for income and 0.27 for total assets are insignificant at all conventional levels. However, some evidence of heteroskedasticity is found in the model with savings as the dependent variable, where the chi-square statistic is highly significant at 1%. Though this violates the homoskedastic assumption of the classical linear regression model (CLRM), it does not destroy the consistency and

unbiasedness of our estimated coefficients. However, they do not have minimum variance in the class of unbiased estimators (Gujarati and Porter, 2009).

The Ramsey reset test for functional misspecification indicated that all three models are robust and free of specification errors. This test uses the F-statistic to test for omitted variables in the specified model. The reported F-statistics of 0.21 for income, 0.13 for savings and 0.41 for total assets are insignificant at all conventional levels.

Furthermore, the test for multicollinearity showed no evidence of collinear relationships among the independent regressors in all our models. The presence of multicollinearity in the CLRM reduces the precision of OLS estimators by violating the assumption of no multicollinearity among the regressors included in the regression model. However, there is no single universal method to detect and measure the extent of this problem. As discussed by Gujarati and Porter (2009), one common method to detect multicollinearity is the use of the VIF test. The larger the VIF_i , the more troublesome or collinear the variable X_i is. Furthermore, Gujarati and Porter (2009, p.340) explain that, as a rule of thumb, if the VIF of a variable exceeds 10, which will happen if R_i^2 (the coefficient of determination of all the independent regressors of the model) exceeds 0.90, that variable is said to be highly collinear. Our VIF test revealed that none of the independent regressors have a VIF exceeding 10. Additionally, the R_i^2 values in all three models do not exceed 0.90.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

This study employed a unique cross-sectional survey to examine the impact of microfinance on income, savings and the acquisition of basic household assets of both beneficiaries and non-beneficiaries of the DATCCU credit scheme. The survey design enabled us to control for the self-selection bias and endogenous programme placement that usually undermine the ability to correctly evaluate programme impact. The findings from the study reveal that credit given to DATCCU members and participation in general have no significant impact on annual income, savings and the value of total assets acquired by beneficiaries of the credit scheme. This implies that microcredit schemes and participation in microfinance programmes do not necessarily lead to poverty reduction through improvement in income, savings and basic household assets acquisition.

These findings are consistent with earlier studies by Coleman (1999), who observed that a women's village-bank group-lending programme in north-eastern Thailand had no significant impact on physical assets, savings, production, sales, productive expenses, labour time and most measures of expenditure on health care and education. Similarly, Al-hassan et al. (2011) note that Grameen Ghana's credit programme has no effect on the incomes of female shea butter processors. The insignificance of credit and participation in general could be due to the small size of credit, inadequate entrepreneurial skills, high interest rates, the misuse of credit and the diversion of credit into consumption and expenditure smoothing. Furthermore, Egyir (2009) and Al-hassan et al. (2011a) indicate that access to microcredit may not be an effective way of alleviating poverty if the loans given to beneficiaries are not adequate. From the summary statistics, it is observed that the average loan size of the sample was GhC681. This appears to be small; since it is far below the average income per person, it might be inadequate to bring any significant changes in the lives of the beneficiaries.

Currently, DATCCU's interest rates range from 2.5% to 5% per month, depending on the type of credit. This is seemingly high and might put beneficiaries into debt rather than improving their conditions. Fernando (2006, p.7) argues that high interest rates prevent the use of loans for

activities that produce low returns. He further advocates that it is important to lower microcredit interest rates to enable the poorest households to benefit. Furthermore, the repayment period of DATCCU loans varied from 3 to 36 months. A short repayment period might undermine the performance of loans that have been channelled into productive ventures with medium- to long-term return periods.

However, there are some mixed findings regarding the various household characteristics. The occupation of the household head has a positive impact on all three outcome variables. Similarly, the education of the household head is positively related to both annual household income and savings but has no effect on the value of total assets acquired. On the other, the number of extended relatives, the household size and the age of the household head are negatively related to either one or two of the outcome variables (annual income, annual savings and the value of total assets acquired).

Given the disappointing findings, I suggest that MFIs should provide occasional entrepreneurial training and education programmes for their clients in order to improve the clients' entrepreneurial skills. Secondly, MFIs should revise their interest rates and repayment periods to avoid overburdening borrowers. I also suggest that MFIs should reassess the amount of credit given to beneficiaries to match the credit needs of borrowers. Ensuring all these will to a large extent improve the capacity of the poor in managing their microenterprises while at the same time freeing them from the undesired outcomes of high interest rates and short repayment periods.

Additionally, effective monitoring of borrowers should be carried out by MFIs to minimize the misuse and misapplication of loans. This will further culminate in the reduction of non-performing loans for MFIs. It was observed that 55.6% of the borrowers surveyed had indeed misused and diverted funds into consumption and expenditure smoothing rather than the actual reasons for which they had borrowed. Hence, further research should be conducted in other municipalities and elsewhere (preferably with panel data) to determine whether the findings of this study can be generalized. Caution should be exercised in making general conclusions regarding the impact of microfinance programmes on poverty reduction, since they may be context specific.

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APPENDIX

Survey for the study

Norwegian University of Life Sciences
School of Economics and Business
Survey on microfinance

This survey is designed to collect microfinance (MFI) information on members and non-members of Dormaa Area Teachers Co-operative Credit Union (DATCCU) to assess the impact of MFI on poverty reduction in the Dormaa Municipality. It is also in partial fulfillment of the award of a masters' degree in Economics at the School of Economics and Business, Norwegian University of Life Sciences. Hence all information collected shall be treated confidentially and used solely for no other purpose than this academic exercise. I therefore entreat all respondents to provide the right and accurate responses to these questions.

Thank you for your co-operation.

Date of interview: Date _____ Month _____ Year _____ Time started _____
Interviewed by: _____ Time finished _____
Respondent ID.....

SECTION A: General information on household head (HH)

1	Name of HH	
2	Age in years	
3	Sex <i>Male=1 ; female= 0</i>	
4	Location <i>Urban =1; rural=0</i>	
5	Marital status <i>Married=1; unmarried=0</i>	
6	Religion <i>[1] Christian [2] Moslem [3] traditionalist</i>	
7	Number of members in the HH	
8	Education of HH head in years	
9	Occupation of HH <i>Public sector=1; private sector=0</i>	
10	Number of extended relatives of HH	

SECTION B: Demography, Occupation/activities of Household members

A “household” includes all members of a common decision making unit (usually within one residence) that are sharing income and other resources. Include workers or servants as members of the household only if resident at least six months in the household.

PID	Name of household member	Age	Relationship to household head	Sex 1=male 0= female	Highest level of education	Engaged in business or wage labour Yes=1 No=0

***PID= Personal Identification

SECTION C: Microfinance information

Collect information on the microfinance history of the respondents and all other members of the household (time of participation, loans applied for, loans granted or not granted, if a member of another microfinance). Transfer PID from section B

PID	Name	Are you a member of DATC CU? Yes=1 No=0	Have you received any credit form DATCC U in the last five years? Yes = 1 No = 0	Loan number	Date	Amount applied for	Amount granted	Purpose of loan application	Actual use	Repayment status Fully paid=1 Not fully paid=2	Interest rate

Obtain credit information on all members of the household from other financial institutions. Transfer PID from section A and B.
Transfer PID from section B.

PID	Name	Has [Name] received any loan from another financial institution in the last three years	Loan number	Name of MFI	Year	Amount in GhC

SECTION D: Household Income

Complete this section with all sources of income of all members of the household. Subsistence agricultural income consists of sale of agricultural produce on daily basis which do not form part of the sale of the main harvest season. Seasonal agricultural income is the total income of all agricultural produce for the main harvest season. Transfer PID from section B

PID	Name	Sources of income in GhC							Total in GhC
		Wages and salaries (monthly)	Subsistence income from agriculture (monthly)	Seasonal income from agriculture (seasonal)	Remittances and gifts (monthly)	Sale of assets (monthly)	Pensions (monthly)	Others (monthly)	
Total									

SECTION F: Household Expenditures

Obtain information on average monthly expenditures incurred by the household. Assist respondents to calculate the monthly household expenditures on the following items and add to get total expenditure for the household. Transfer PID from section B

PID	Name	Type of expenditure and value in GhC									Total GhC
		Food	Clothing	Education	Health	Transportation	Rent	Farm inputs	Miscellaneous	Others	
Total GhC											



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