

**IMPACT ASSESSMENT OF MICROCREDIT ON THE WELL-BEING OF WOMEN IN
GHANA: A CASE IN ATWIMA MPONUA DISTRICT**

BY

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Science and Technology, in partial fulfillment of the requirements for the Degree of**

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DECLARATION

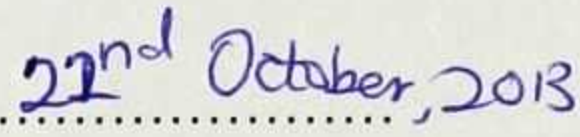
I hereby declare that I have wholly undertaken the study reported herein under the supervision of Dr. Hadrat M. Yusif, except where due acknowledgment has been made in the text.

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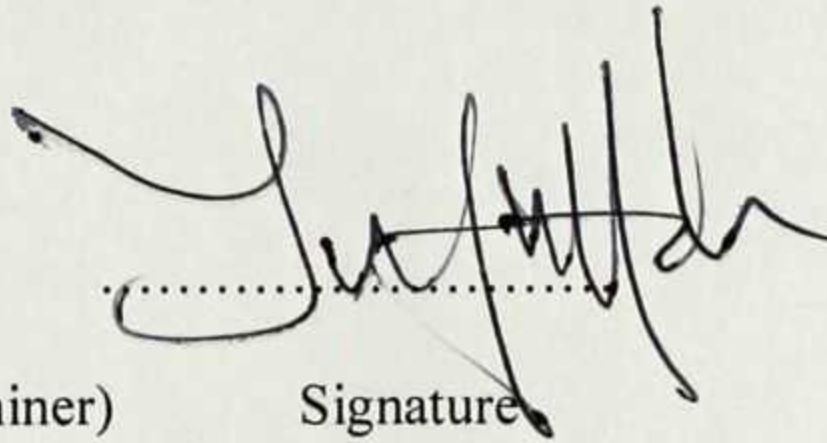

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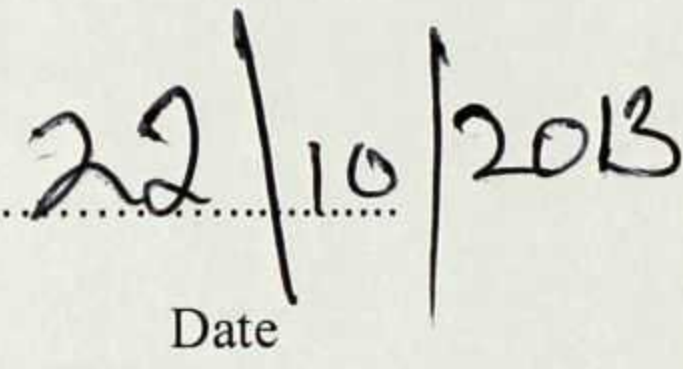
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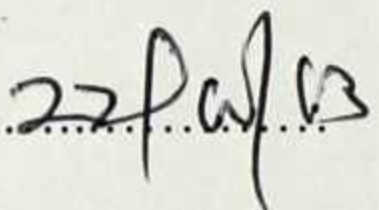
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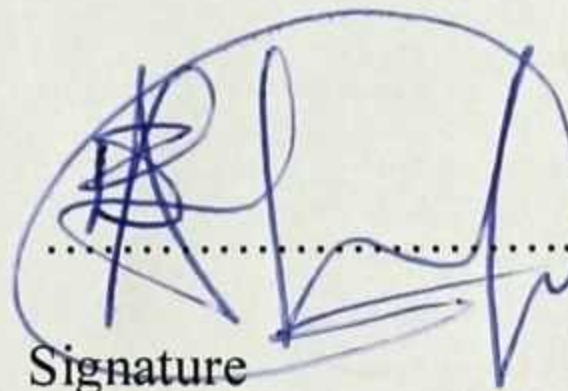

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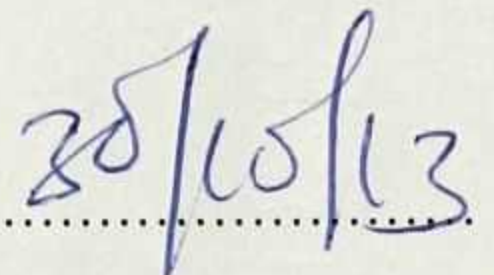
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ACK DEDICATION

I dedicate this thesis to my Parents, Vera Awuah (Sister) and Mr. Mike Osei-wusu (KNUST) who in diverse ways have supported and inspired me throughout this study.

I also want to thank my friends and colleagues for their support and encouragement throughout this journey.

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TABLE OF CONTENTS

Contents	Page
DECLARATION	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
LIST OF TABLES	x
ABSTRACT	xi
INTRODUCTION	1
1.0 Background of the Study	1
1.1 Statement of the Problem	3
1.2 Objective of the Study	5
1.3 Justification of the Study	5
1.4 Scope of the Study.....	6
1.5 Organization of Study.....	7

CHAPTER TWO	7
LITERATURE REVIEW	7
2.0 Introduction.....	7
2.1 Concept of Poverty.....	7
2.2 The concept of Microfinance and Microcredit	9
2.3 Evolution of Microfinance/Microcredit	10
2.3.1 Theoretical Models of Microcredit.....	11
2.3.2 Standard Economic Theory.....	12
2.3.3 Peer Monitoring Theory	13
2.3.4 Neo-Classical Growth Theory	13
2.3.5 Welfarist Theory	14
2.3.6 Institutional Theory.....	15
2.4 Evolution and Origin of Microfinance in Ghana	16
2.5 Empirical Studies on the Impact of Microfinance/Microcredit on the well-being of women.	18

2.6 Conclusion.....	24
CHAPTER THREE.....	23
METHODOLOGY.....	23
3.0 Introduction.....	23
3.1 Research Design.....	24
3.2 Model Specification.....	27
Model 2 (Impact of loans or credits access on women's ability to afford children's education) ..	27
Model 3 (impact on loans or credits access on ability to afford three square meals daily)	27
Model 4 (impact on loans or credits access on comfortability in accommodation)	27
3.3 Econometric Estimation.....	29
3.3.1 Model 1	27
3.3.2 Model 2	31
3.3.3 Model 3	31
3.3.4 Model 4.....	32

3.4 Expected Signs of the Parameter Estimates.....	30
3.5 Data Analysis	32
3.6 Background of the Study Area.....	33
DATA ANALYSIS AND DISCUSSION OF RESULTS	35
4.0 Introduction.....	35
4.1 Descriptive Statistics.....	38
4.2. Descriptive Analysis of the variables	44
4.2.1 Regression Results (Model 1).....	46
4.2.2 Regression Results (model 2)	49
4.2.3 Regression Results (model 3)	52
4.2.4 Regression Results (model 4)	55
4.3 Thresholds Parameter Interpretation in the Ordered Logistic Models.....	59
4.4	
Conclusion.....	61

CHAPTER FIVE	59
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.....	59
5.0 Introduction.....	59
5.1 Summary of major findings	59
5.2 Conclusion	61
5.3 Recommendations	61
5.4 Limitations of the Study	62
REFERENCES	63
Appendix 1	68
Appendix 2	70
Appendix 3	71

LIST OF TABLES

LIST	PAGE
Table 4.1: Descriptive Statistics	38
Table 4.2: Occupation of Respondents	39
Table 4.3: Education of Respondents	40
Table 4.4: Marital Status of Respondents	41
Table 4.5: Products Patronised by Respondents	42
Table 4.6: Loan Purpose of Respondents	43
Table 4.7 Well-Being of Respondents	44
Table 4.8 Women's access to loans or credits on Quality Healthcare	47
Table 4.9 Women's access to loans or credits on Quality Education for their Children	50
Table 4.10 Women's access to loans or credits on three square meals a day	53
Table 4.11 Women's access to loans or credits on Comfortability in their current Accommodation	57

ABSTRACT

The World Bank and other development agencies recognize the importance of women's access to financial resources as an important strategy in poverty reduction. Donors, therefore, continue to direct microfinance services and resources to women as a way of encouraging productivity. In spite of the proliferation of Microfinance Institutions and services (MFIs) in Ghana, poverty is still ubiquitous especially in the rural areas among women. Using a sample of 400 women in the informal sector from Atwima Mponua District of Ghana, and ordered logistic regression analysis, this study was basically conducted to find the impact of MFI microcredits or loans received by women on their well-being using four well-being indicators in Ghana. The major finding was that women utilised the services of microfinance institutions, but few have access to credit or loans. The women who accessed credits had improved well-being in relation to their ability to afford quality healthcare, children's education and comfortability in current accommodation than non-beneficiaries. This study therefore recommended that policies must be adopted to encourage the MFIs to grant more loans to more women.

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

According to the World Bank report (2000), almost half of the world's population lives on US\$2 a day or less and the number living on less than one dollar has increased over the past 15 years.

Almost one-third of the world's population suffers malnutrition due to insufficient intake of calories and protein or critical micronutrients as a result of low incomes. Thus, the well-being of most people is generally low.

As a result, poverty reduction has been the focus in many developing countries. The aim is to create jobs, empower the youth, women, and the vulnerable in society. Ghana is not an isolated country in terms of poverty. Like many other developing countries, Ghana has gone through several poverty reduction programmes, including those policies prescribed by the Bretton Wood Institutions and other donor agencies.

The main goal of Ghana's Growth and Poverty Reduction Strategy (GPRS II) was to eliminate widespread poverty and growing income inequality, especially among the productive poor who constitute the majority of the working population (Asiamah and Osei, 2007).

Generally, many people perceive lack of access to credit as one of the main reasons why many people in developing countries remain poor. Usually, the poor have no access to loans from the traditional banking sector, due to the fact that they cannot put up acceptable collateral. For instance, the 2010 Population and Housing Census conducted by the Ghana Statistical Service indicates that 86% of the working population is found in the private informal sector, an increase of about 6% of the year 2000 estimates. According to Asiamah and Osei (2007), private sector

workers are characterized by lack of access to credit, which retards the development and growth of the private sector of the economy, partly due to the higher cost of screening and monitoring the activities of the people in the private informal sector, and of enforcing their contracts.

However, in the late 1980s, the poor in developing countries, including Ghana, heaved a sigh of relief as they gained access to small loans with the help of microfinance programmes. Most microfinance firms, such as the Grameen Bank in Bangladesh, provided small loans and savings services profitably on a large scale as they received continuing subsidies to make their services fully sustainable, and attain wide outreach to clients (Robinson, 2001).

Micro-finance refers to the provision of a broad range of services such as deposits taking, loans (microcredit), payment services, money transfers and insurance to the poor and low-income households and their micro-enterprises (Khawari, 2004). As part of microfinance, micro-credit is the extension of small loans/credits to the unemployed, poor entrepreneurs and others living in poverty, and are not considered bankable because such individuals lack collateral, steady employment and a verifiable credit history and therefore cannot meet even the most minimal qualifications to gain access to traditional credit (Malarvizhi and Rani, 2011).

Over the years, Ghana's microfinance sector has thrived and evolved into its current state through financial sector policies and programmes such as the provision of subsidized credits, establishment of rural and community banks (RCBs), the liberalization of the financial sector and the promulgation of PNDC Law 328 of 1991. These allowed the establishment of different types of non-bank financial institutions, including savings and loans companies, finance houses, and credit unions etc to provide financial services to the people.

Currently in Ghana, microfinance has become more formalized and spread over the country and therefore their impact on women is a subject worthy of serious examination. Microfinance Institutions (MFIs) in Ghana has grown (in number and products/services) although up to date data on MFIs in Ghana are not readily available. For example, the Ghana Microfinance Network (GHAMFIN), the organization which coordinates the activities of MFIs in Ghana, put the number of regulated and non-regulated MFIs at about 233 as at the year 2001 serving over 360,000 clients most of whom are women in both rural and urban centres. These women are usually engaged in activities such as farming, food processing, petty trading, service provision and street vending.

As a means of helping the poor, mostly women, to be self-reliant and improve their well-being, Governments, Non-Governmental Organizations (NGOs), Microfinance institutions, Rural Banks and Commercial Banks have been giving women entrepreneurs' (Small and Micro Enterprises) some amount of help in the form of micro-credit. This is to help the women to start some income generating activities so as to save them from poverty. The dynamic role of micro-credits in Ghana has been highly emphasized these days. These forms of credits have been identified as the means through which the rapid industrialization and other developmental goals of developing countries can be realized.

1.1 Statement of the Problem

The scholarly works of Chant (2003), Morrison et al (2007) have lend credence to the argument that women bear a disproportionate and growing burden of poverty in developing countries. The United Nations and other international development agencies have asserted that 60 to 70 percent of the world's poor are females. Most of these international agencies posit that poverty is a

socio-economic problem that has been the massive but acute in Sub-Saharan Africa (SSA) and Asia currently (www.unifem.org).

In Ghana, poverty is a rural phenomenon in that “experiences with real or extreme poverty are more pronounced in rural areas than in the urban corridors”, and that, women are the most affected (Centre for Democratic Development (CDD), 2008; Debrah, 2013). The CDD, in their 2008 report, assert that most rural dwellers do not have adequate access to medical care and cash income; thus 38% of rural dwellers, compared with 25% of urban dwellers. It is also estimated that rural poverty contributes approximately 90% to national poverty (Oduro, 2001). In 1991, the Ghana living Standards Survey (GLSS) reported that poverty level in the country was 51.7%. In 1999, this dropped to 39.5% and again to 28.5% in 2006.

In 2006, a lower portion of women consisting of 8.6% of women were estimated to be in paid employment compared to 26.9% of men (GLSS5, 2008). Debrah (2013) however, reports that poverty rate between 2001 and 2011 had dropped by 8.6 per cent and 10.4 percent in urban and rural areas, respectively.

Over the years, Ghana has undertaken some initiatives to drastically reduce, if not eliminate absolute poverty in the country. These include the Structural Adjustment Programme (SAP), Economic Recovery Programmes (ERP 1&2), Financial Structural Adjustment Programme (FINSAP) and the Ghana Poverty Reduction Strategy 1&2 (GPRS 1&2).

The FINSAP led to the establishment of Micro-Finance Institutions (MFIs) some of which are banking institutions, Non-governmental organisations (NGOs), Christian Organizations and Non-banking Financial Institutions. They are spread across the whole country. The main goal was for the MFIs to help reduce poverty and improve the livelihoods of low income families who

were unable to access funds from the conventional banks. According to Debrah (2013), majority of women continue to suffer from poverty also bear the devastating effects of poverty (Again, most independent reports have pictured the devastating effects of poverty.

Indeed, women continue to be the core client base of MFIs, but much is not known regarding the extent to which MFIs reduced the poverty level of women and their households. Giving the high levels of poverty among women in Ghana and other developing countries, this study therefore sought to investigate the impact of microcredit or loans received by women on their well-being (as a measure of poverty alleviation) in Ghana.

1.2 Objective of the Study

This study seeks to assess the effects of microcredit on poverty reduction among women in the Atwima Mponua District. In addition to gaining a more general understanding of the challenges and prospects associated with using microfinance, the study would specifically to:

1. Identify microfinance products that are patronized by women
2. Find out activities that monies received from MFIs are put into by women
3. Measure the impact of micro-credit on the wellbeing of women

1.3 Justification of the Study

Studies like Fisher and Sriram (2002) have suggested that microfinance and indeed the credits granted improve the well-being of beneficiaries while others like Hulme and Mosley (1996) posit otherwise. Many ~~MFIs~~ have been set up in Ghana with the aim of helping to alleviate poverty through the credits granted. It is therefore important to conduct an independent study to know whether such loans have really had a positive impact or not on beneficiaries. This study,

after its completion, would inform us on whether or not MFIs have contributed towards reducing poverty and thereby assisting policy makers and stakeholders on which policy to adopt. Also, the study would provide information on the level of accessibility to credit by women and the challenges women face in their attempt to access loans. This would aid policy makers to formulate policies or measures to improve accessibility.

1.4 Scope of the Study

There exist some Micro finance Institutions in the Atwima Mponua District with the main objective of providing financial services to the poor which cannot be done through macro financial institutions and as such helping in alleviating poverty. The research was limited to the respondents (participants and non-participants) in the Atwima Mponua District. For the purposes of this study, the wellbeing shall mean the ability to afford quality healthcare services, three square meals, children's education and comfortable accommodation.

1.5 Organization of the Study

The study is organized into five chapters. Chapter one covered introduction, problem statement and objectives of the study. Chapter two dealt with the literature review, both theoretical and empirical theories were reviewed. Chapter three covered methodology of the study, chapter four dealt with analysis of data of which econometric methods were used to analyse the results and the chapter five dealt with summary of findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The realization that women who are relatively poor can borrow, use and repay loans has generated a great deal of interest in microfinance among policy makers and development practitioners as strategies for poverty reduction (Khandker, 2001). This chapter presents a review of microfinance theories and methodologies, evolution of microfinance, concept of poverty, as well as a review of previous studies related to this study.

2.1 Concept of Poverty

Barker (1995) describes poverty as material deprivation, and that the state of being poor or deficient in money or means of subsistence. The poor are those who cannot satisfy their basic needs for food, clothing, shelter, and health—individuals who lack the goods and services needed to sustain and support life with the income to purchase the goods or services that would meet those needs (World Bank 2001). Therefore, social indicators such as availability of infrastructural services, including safe water, sanitation, solid waste collection and disposal, storm drainage, public transportation, access roads and footpaths, street lighting and public telephones are usually considered concerning poverty definition.

According to Englama and Bamidele (1997), poverty can be summarized in both absolute and relative terms as a state where an individual is not able to cater adequately for his/her basic needs of food, clothing, and shelter, meet social and economic obligations; lacks gainful employment, skills, assets and self-esteem; and has limited access to social and economic infrastructure. This

indicates that the poor lacks basic infrastructure such as health, potable water, and education, which has resulted to limited chance of advancing his/her welfare and lack of capabilities.

According to Ravallion and Chen (2001) and World Bank (2003), economists have defined poverty using purchasing-power-parity exchange rates based on price and consumption, which has produced the poverty line, commonly known as the dollar-a-day line. The dollar-a-day line has been frequently used in defining poverty because it seems to be representative of the domestic poverty line prevalent in low-income countries in sub-Saharan Africa and south Asia (Debrah, 2013). This approach assumes that individuals' well-being can be equated with the capacity to meet essential physical survival needs (usually food), and the ability, shown by income, to choose between different bundles of commodities (Kabeer 2003; May 2001).

Lund (2009) and Martins (2007) argues that the dollar-a-day threshold might make it trite to say that households below this level of income are poor in terms of health maintenance, acceptable standards of hygiene, and sufficient clothing for personal needs.

Bradshaw and Linneker (2003) indicate other methods of defining poverty have received attention. Some of these are headcount (which measures the percentage of a population living below the poverty line), and the poverty gap (which measures the average depth to which people are below the poverty line).

Johnson and Rogaly (1997) emphasized that poverty is vulnerability to downward fluctuations in income which can be heightened by the lack of saleable or pawnable assets and debt obligations. He further explained that interventions which reduce such vulnerability and protect livelihoods also reduce poverty. Simanowitz et al (2002) cited by Nalunkuuma (2006) also argues that poverty can be reduced by increasing income and economic stability, which will lead to

improved fulfillment of basic needs and develop a range of assets that will reduce household vulnerability to physical, social and economic shock.

2.2 The concept of Microfinance and Microcredit

Savings and credit groups have operated for centuries, some of which include the "susus" in Ghana, "chit funds" in India, "tandas" in Mexico, "arisan" in Indonesia, "cheetu" in Sri Lanka, "pasanaku" in Bolivia as well as numerous savings clubs and burial societies found all over the world (Yahaya et al, 2011).

Formal credit and savings institutions for the poor have also been around for decades, providing customers who were traditionally neglected by commercial banks a way to obtain financial services through cooperatives and development finance institutions (Asiamah and Osei, 2007).

According to Schreiner and Colombet (2001), microfinance is defined as "the attempt to improve access to small deposits and small loans for poor households neglected by banks". Likewise, Asiamah and Osei, (2007) also view microfinance as the provision of small loans and other facilities like savings, insurance, transfer services to poor low-income households and micro enterprises. Therefore, Microfinance is about providing services such as loans, savings and insurance to poor people living in both urban and rural settings who are unable to obtain such services from the formal financial sector.

Moreover, Rogaly et al (1999) cited by Fisher and Sriram (2002), indicated that microfinance embraces a range of financial services that seek to meet the needs of poor people, both protecting them from fluctuating incomes and other shocks and helping to improve their livelihoods thereby making microfinance institutions, instruments for poverty reduction in a country.

Lont and Hospes (2004) describes Microcredit as making small loans available to poor people (especially those traditionally excluded from financial services) through programmes designed specifically to meet their particular needs and circumstances. Such small loans or credit to the poor are to help them pursue self employment. Therefore microcredit is a form of microfinance. Hulme et al, (1996) cited by Nalunkuma (2006) indicated that Microcredit is a major tool in reducing poverty and plays a facilitating role in the process of economic development: therefore it should be provided to meet the existing needs of the poor. Microcredit is one of the best known means of helping small business owners in developing countries move out of poverty.

Typically, the characteristic features of microfinance programmes are that: Loans are usually relatively short term, less than 12 months in most instances, and generally for working capital with immediate regular weekly or monthly repayments. Loans are also disbursed quickly after approval, particularly for those seeking repeat loans. The traditional lender's requirements for physical collateral such as property are usually replaced by a system of collective guarantee (or solidarity) groups whose members are mutually responsible for ensuring that their individual loans are repaid (Lont and Hospes, 2004).

MFIs provide similar products and services to their customers as formal sector financial institutions. The scale and method of delivery differ, but the fundamental services of savings, loans (consumption or business), and insurance are the same (Nourse, 2001).

2.3 Evolution of Microfinance/Microcredit

The systems of providing credit to poor people have a long history (Shah et al, 2007) but a new way of microcredit provision has emerged in the past thirty years, inspired by pioneering innovations in Bangladesh, Bolivia, Indonesia and elsewhere (Duvendack et al, 2011).

Microcredit has subsequently been innovated in many ways, and is now more commonly viewed as one component of microfinance, along with savings, insurance and payment services for poor people. Microfinance institutions (MFI) have become important in the fight against poverty, growing worldwide in number of organizations and clients, and amount of donor funding (www.mixmarket.org).

The origins of the current microcredit model can be traced back to action research in the late 1970s, carried out by academics as well as practitioners in organizations that were created to deal with the relief and rehabilitation needs of post-independence Bangladesh. The first microcredit institution is The Grameen Bank in Bangladesh. Muhammad Yunus established this bank in 1976 as a non-profit organization dependent upon government subsidies to provide credit to the rural poor. Microcredit reached Latin America with the establishment of PRODEM in Bolivia in 1986; a bank that later transformed into the for-profit BancoSol. The 1980s witnessed a growing number of non-governmental organizations (NGOs) which experimented with different modalities of delivering credit to the poor. The various models converged in the beginning of the 1990s toward a uniform “Grameen-model” of delivering microcredit. It sparked a sharp growth of access to microcredit during this decade. In recent years, the standard Grameen-model has undergone more refinements in order to cater to different niche markets as well as to different life-cycle circumstances (Zaman, 2004; Malarvizhi and Rani, 2011).

2.3.1 Theoretical Models of Microcredit

Even though microfinance has been formalized with laid down structures, most of the models of microcredit fall within the purview of the informal credit market. Some of the theoretical models are briefly described in this section.

2.3.2 Standard Economic Theory

The Standard economic theory assumes perfect information, perfect contract enforcement and heterogeneous borrowers and lenders. Based on these assumptions credit markets are modeled perfectly competitive, with results of zero profit in equilibrium. In considering this type of model the expectation is to observe one equilibrium interest rate in one region reflecting the intersection between demand and supply of credit in the area. However, empirical studies of the credit market in developing countries, like Ghana, demonstrate the existence of a dual credit market and prove a gap between formal and informal interest rates charged within the same region.

The basics of lending are to provide a loan today and get it repaid, usually with an interest rate, sometime in the future. This natural time delay in a debt contract, as compared to an instant exchange of two goods, makes lending potentially risk (Bardhan and Udry, 1999). A credit contract involves a promise of future payments. Unless the provider of credit can ensure that this promise is kept in the future, there will always be a risk that the promise is not kept, and hence, repayment can fail.

In developing countries such devices are not readily available and formal lending institutions are usually not willing to lend to poor individuals who are landless and with an unknown credit history. In developing countries we observed that, individuals that are unable to get loans from formal institutions can still obtain credit from informal lenders (Bardhan and Udry, 1999). This theory indicates that microfinance institutions in developing countries such as Ghana are able to handle information and enforcement problems.

2.3.3 Peer Monitoring Theory

Stiglitz (1990) looks at how peer monitoring can help improve the operations of MFIs and welfare of borrowers. He attributes the success of the flagship of MFIs, the Grameen Bank to peer monitoring. Peer monitoring is largely responsible for the successful financial performance of the Grameen Bank of Bangladesh and of similar group lending programs elsewhere. But peer monitoring has a cost. It transfers risk from the bank, which is in a better position to bear risk, to the cosigner (Stiglitz, 1990). Peer monitoring theory demonstrates that it can be a better way of enhancing microfinance and reducing poverty in Ghana through the transfer of risk that leads to an improvement in borrowers' welfare.

2.3.4 Neo-Classical Growth Theory

According to Anderman and Kropp (2006), neo-classical growth models emphasizes the importance of savings in order for a country's economy to grow. For any given capital stock, the production function determines how much output the economy produces. The capital stock changes over time and those changes may lead to economic growth. Investment and depreciation affect the capital stock and there is one single capital stock at which the amount of investment equals the amount of depreciation; the steady state level of capital. The steady state level of capital is the long run equilibrium in an economy. The savings rate in an economy determines the allocation of output between consumption and investment and is thus a key determinant of the steady-state capital stock. This is a classical case of micro foundation of macroeconomics issues.

The emergence of microfinance institutions represents an option of going to informal moneylenders and presents a way to eliminate the borrowing constraint in developing countries.

In countries where the financial system is not well developed and functioning, microfinance can lead to an increase in the individual's utility and wealth by enabling him or her to increase consumption and saving (Todaro and Smith, 2003).

This theory shows that microfinance in Ghana allows individuals who have been neglected by formal sector financial institutions to save, making it possible for each individual to follow his or her optimal lifetime consumption which reduces poverty.

2.3.5 Welfarist Theory

The welfarist theory focuses on the demand side (clients). This theory supports the idea of subsidizing microcredit programmes in order to lower the cost for the microfinance institutions so that they can offer low interest rates on their loans. The performance of the MFI's is measured through household studies with focus on the living standard of the individuals; number of saving accounts, number of loans, productivity improvement, incomes, capital accumulation, social services such as education and health as well as food expenditures. (Congo, 2002).

The welfarists, who are at odds with institutionalists over the issue of sustainability, argue that MFIs can achieve sustainability without the institutionalist definition of self-sufficiency, Woller, Dunfield, and Woodworth (1999). Welfarists also argue that gifts (i.e., subsidies) from donors serve as a form of equity, and as such the donors can be viewed as investors. Unlike investors who purchase equity in a publicly traded firm, MFI donors do not expect to earn monetary returns, instead, these donor-investors realize an intrinsic return.

These donors can be compared to equity investors who invest in socially responsible funds, even if the expected risk-adjusted return of the socially responsible fund is below that of an index fund. These socially responsible fund investors are willing to accept a lower expected return

because they also receive the intrinsic return of not investing in firms that they find offensive (Woller, Dunfield, and Woodworth, 1999).

This theory suggests that the idea of subsidizing microcredit programmes in Ghana can help to lower operational cost of microfinance institutions and motivate them to offer low interest rates on their loans to the poor individuals.

2.3.6 Institutional Theory

The institutionalist view of microfinance argues that a MFI should be able to cover its costs with its revenues. Institutionalists feel this self-sufficiency leads to long-term sustainability for MFIs, which will facilitate greater poverty alleviation in the long-term. The institutionalist argument is consistent with Hollis and Sweetman (1998), who discuss historical cases in an attempt to identify the institutional designs that facilitated success and sustainability for 19th century loan funds in the UK, Germany, and Italy. The authors concluded that, subsidized loan funds were more fragile and lose focus more quickly than those that obtained funds from depositors.

The institutionalists criticized the subsidization because it leads to high, unpaid rates and transaction costs, which have lead to the failure of many microcredit programmes. They mean that it is not sustainable for the MFI's to be subsidized and that the subsidies lead to an inefficient allocation of the financial resources. The economists supporting this view mean that the welfarists make the wrong assumptions when they say that the repayment interest rate must be low, that the clients are not creditworthy and unable to save and that commercial banks could not survive in rural areas because of the high costs of offering financial services to the poor households. The Institutional view of self-sufficiency as a requirement for MFI sustainability

seems untenable until one realizes that there appears to be a trade-off between self-sufficiency and targeting.

Morduch (2000) has termed the differing viewpoints of the institutionalists and welfarists approaches as the “microfinance schism”. Welfarists often point out the success of the Grameen Bank and its ability to provide financial services even for the very poor of Bangladesh (Woodworth, 2000). On the other hand, the Grameen Bank, the flagship of MFIs depended on subsidies. For example, in 1996 the Grameen Bank required subsidies of US\$ 26-30 million for its operations (Morduch, 1999).

The institutionalist theory demonstrates that Microfinance Institutions (MFIs) in Ghana should be self-sufficient by been able to cover their costs with their revenues. This would lead to long-term sustainability and facilitate greater poverty alleviation in the long-term.

2.4 Evolution and Origin of Microfinance in Ghana

Prior to formal banking systems in Ghana, many of the poor, mainly women, and those in rural communities relied heavily on informal banking services and the semi-formal savings and loan schemes. Cooperatives, especially among cocoa farmers of the 1920s, engaged in thrift and credit. The mission of the informal microcredit organizations or microfinance services in Ghana was to provide social and economic support for the least advantaged, especially rural women and their families. For some, known as *susu*, there were weekly meetings: each woman donates a set sum of money to a common pot that is given to one woman each week. When there is an emergency, a participant can withdraw out of turn; otherwise the pot is rotated uniformly until all members are served (Asiamah and Osei, 2007).

The first cooperatives were formed in the 1920s. In 1946, the Gold Coast Cooperative Bank was established to serve particularly savers and borrowers belonging to cocoa cooperative societies. At this time men dominated cocoa farming systems. Cooperatives are “member-owned” organizations. Well run cooperatives have commercial borrowing power that can be tapped on a seasonal basis to finance members through production loans, and to finance storage and processing of commodities that will be sold before the next season. The season’s sales proceeds were used to repay the commercial loan. Short-term loans were the most common type of funding obtained by cooperatives; medium or long-term loans have been more difficult to obtain.

The confidence that lenders have in the cooperative’s operations, market niche and management determines its ability to attract longer-term loans. The conditions that create confidence usually include a loyal membership base. In general, the more assets a reasonably successful cooperative owns and has fully paid for – buildings, equipment, stock (inventory) and financial reserves – the more others are willing to lend additional funds to it. Women-dominated agro-processing and trade got included at this stage. Through cooperative action, the Rice Farmers Cooperative in Dahwenya (mixed group) received micro-loans from a formal bank, the Agricultural Development Bank (ADB) for several years (Asiamah and Osei, 2007).

In 1955, Credit unions were introduced in the northern part of Ghana. The objective of the credit union was to encourage thrift and savings among members (farmers, traders, processors and non-agricultural workers) for productive ventures to improve the socioeconomic lives of the people. Today, there are 28 African countries where the credit union idea operates. (Egyir, 2010), contend that credit unions enable the poorest in a community to save and access loans for income generating activities. Cooperative Credit Unions were expected to take over some of the lending being done by usurious money lenders.

Again, a number of government-financed loan schemes were instituted in the late 1950s with the aim of making more finance available for local development. Then in the 1960s special banks, National Investment Bank and Agricultural Development Bank, were established. Commercial banks, notably the Ghana Commercial Bank, also operated rural credit schemes. But rather than giving credit to rural producers, these banks were draining the rural areas of savings, which were invested in the commercial and housing sectors in the urban areas.

The need for rural banks rose by the turn of the 1970s. The intermediating credit to the rural sector of the economy upon which Ghana's agricultural economy depends; currently contributing 38% of GDP had also been failing to achieve their objectives (Egyir, 2010).

According to Asiamah and Osei (2007), there are three broad types of microfinance institutions operating in Ghana. These are formal suppliers of microfinance (i.e. rural and community banks, savings and loans companies, commercial banks), Semi-formal suppliers of microfinance (i.e. credit unions, financial nongovernmental organizations (FNGOs)), and cooperatives. There are also informal suppliers of microfinance (e.g. susu collectors and clubs, rotating and accumulating savings and credit associations (ROSCAs and ASCAs), traders, moneylenders and other individuals).

2.5 Empirical Studies on the Impact of Microfinance/Microcredit on the well-being of women

Several studies have been conducted in the field of microfinance, ranging from impact assessment on poverty among women to women empowerment. Other studies do not support the argument that microfinance helps the poor. This section reviews some of these studies for thorough understanding of microfinance impacts.

Maheswaranathan and Kennedy (2010) examined the relationship between the Micro-Credit programs and elimination of economic hardship among women beneficiaries of BRAC in Sri Lanka using descriptive statistics. The study found a strong positive relationship between Micro-Credit Programs and Elimination of Economic Hardship of women in that women beneficiary had improved quality of life than existed earlier. Thus, suggesting that credits to women improve their well-being.

Pitt et al (2003), studied credit programs for the poor and the health status of children by gender in rural Bangladesh using a multipurpose household experimental survey conducted in 87 villages. The study found that credits given to women had large and statistically significant impact on healthiness of children (both boys and girls). Thus female credits had significant positive effect on the health status of children than male credits, and thereby improving their livelihoods.

Again, McNelly and Dunford (1999) examined the impact of credit with education on mothers and their young children's nutrition in Bolivia using quasi-experimental design. The study was to evaluate how credit and education services, when provided together to groups of women, can increase income and savings, improve health/nutrition knowledge and practice, and empower women. The study found that participants were able to augment household assets (chiefly animals) and smooth consumption needs by purchasing foods in bulk and meeting other basic needs. Income increased about 5-fold under the CRECER Credit with Education Program. In addition, assets (animals for family needs) and savings increased significantly.

Marcus et al (1999) also contend that microfinance can help reduce poverty and vulnerability when they conducted a study on Save the Children's microfinance projects. The study found that

microfinance contributes to improvements in children's welfare through improved nutrition, housing, health and school attendance, and reductions in harmful child labour resulting from increased incomes. They however recounts that improvements to livelihood security are usually more incremental than the dramatic success stories sometimes quoted but concede for the people concerned, small changes in livelihoods may be significant.

Also, Puhazhendi and Badatya (2002) assessed the impact of microfinance channelled through SHG Bank Linkage programme implemented by NABARD since 1992 in eastern regions of India. The study used primary data and analyzed descriptively. The socio-economic conditions of the members were compared between pre and post-SHG situations to quantify the impact, using 2001-2 as the reference period. The major findings of the study were that credits provided for both production and consumption purposes allowed consumption smoothing and enabled households to mitigate the effects of negative shocks.

Imai and Azam (2010) used household panel data from 1997 to 2005 and employed the treatment effects model (TEM) and propensity score matching (PSM) for participants and non-participants of microfinance programmes in Bangladesh. The study found, under TEM, that household access to general loans from MFIs did not increase per capita household income significantly but household access to loans for productive purposes from MFIs significantly increased per capita household income. The study therefore emphasized the importance of the purpose and monitoring of how clients use the loans in a bid to increase household income to decreasing household poverty. Also with the application of TEM and PSM to each cross-sectional component of the panel data, the poverty reducing effect of MFIs on poverty was significantly reduced over the years.

Again, Ghalib et al (2011) used Propensity Score Matching to control for sample selection bias in a study in Pakistan. They confirmed that microfinance programmes had positive impact on the welfare of beneficiary household in terms of expenditure on healthcare or clothing, monthly household income, and certain dwelling characteristics such as water supply and quality of roofing and walls.

In Ghana, Adjei et al (2009) examined the extent to which microfinance has contributed to poverty reduction using cross-sectional survey that involved multi-stage sampling. They found that microfinance programmes, among other things, put participants in a better position to contribute towards their children's education, and pay for healthcare services for members of their households. They, however, recounts that clients who remained in microfinance programmes for long periods of time suffered from diminishing marginal returns.

Likewise, Arku and Arku (2009) investigated the impacts of microfinance on gender roles, the extent to which socio-cultural factors influence these changes, and how such changes affect the well-being of households in rural Bogoso of Ghana. Their study used mixed approaches (semi-structured interviews, focus-group discussions, key-informant interviews, participant observation, and secondary-data reviews) to collect data from 40 households. Their findings were that microfinance helped women to be financially involved in their children's education, and largely contributed to household well-being. They, however, contend that socio-cultural factors may promote or inhibit well-being in rural households, and that microfinance is not a sufficient tool in itself to promote women's and households' well-being.

Also, Mahama (2012) evaluated the operations of micro-credit schemes in poverty alleviation of the rural people in Northern Ghana using questionnaires to capture responses of beneficiaries

of the Ghanaian Danish Community Programme (GDGP) Micro-credit scheme as well as financial reports and statements of the scheme. The study found that the credit services had a positive impact on the beneficiaries overall lives, family nutrition and savings.

Annim et al (2013) assessed the causal link between receiving credit from a microfinance institution and poverty reduction among 500 rural women engaged in agro-processing in the Upper East Region of Ghana of whom 250 were beneficiaries of microfinance while 250 were non-beneficiaries. The method of study was quasi-experimental approach. The results support the hypothesis that microfinance has 0.12% poverty reducing effect.

It should be emphasized that some studies suggest negative or no impact of microfinance on the poor, whether on women or men. This is evident in Hulme and Mosley (1996) study of 13 micro-credit schemes in Asia, Africa and South America, that found microcredit to benefit only the upper and middle income poor rather than the 'poorest of the poor'. In 2001, Mosley conducted a subsequent analysis of Hulme and Mosley (1996) study and found no impact of microfinance on extreme poverty.

2.6 Conclusion

Despite the fact that previous studies recognize the positive impacts of microfinance, particularly credits or loans, on women's well-being, these studies have not looked at women's well-being in terms of their comfortability in the current accommodation though other works did find negative impacts. Some of these studies have not also looked the services mostly patronized by women as well as activities women use such credits for. As a result, this study therefore seeks to fill this gap.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter spells out the methods employed by the study as well as the model specification, data collection method, definition of the variables to determine whether or not the credits received by these women has caused a change in their wellbeing in relation to their ability to afford quality healthcare, children's education, daily three square meals and comfortability in current accommodation and the background of the study area. It also explores the methods used to elicit information from the respondents (women in the informal sector). The study employed descriptive and quantitative methods for the data analysis. Ordered logistic regression analysis model was employed under the quantitative method.

3.1 Research Design

The research design for the study is described in the form of population and sampling methods, types of data, sources of data, sample size, data collection Instruments and data collection process.

The population of the women in the Atwima Mponua district is about 58, 090 (GSS, 2012). The respondents (women) were conveniently selected and information on income, age, employment and educational levels were also collected.

This study used ~~primary data~~ in the form of structured interviews (questionnaire) as the means of data collection. The structured interviews contained questions that centred on whether one uses the services of MFI, type of service (s) used, and how long they have been with the MFI,

whether they have been granted loans or not among other questions. Respondents were also asked to rate their ability to afford healthcare, children's education, daily three square meals ranging from very low to very high ability. Again, respondents rated their comfortability in current accommodation ranging from very uncomfortable to very comfortable. The questionnaires were administered to women, particularly those in the informal sector, since they were the best source of the kind of information needed.

In determining the sample size for the study, the formula = $\frac{N}{1+N(e)^2}$, suggested by Yamane (1967) was used. In the formula, *n* is the sample size to be determined, *N* is population size, and *e* represents error level (0.05). Based on the formula, the appropriate sample for the study should have been 397 but was approximated to 400. This was to cater for incomplete and missing questionnaires. Thus, 400 women took part in the study. The data collection Instruments used was paper and pen and with the data collection process, there was a personal interview with the women in the form of the questionnaires given out where they were asked to provide appropriate answers to the questions. Data collection started in early March and ended in late April, 2013.

3.2 Model Specification

Ordered logistic regression was used, in this study, to determine the impact of credits received by the women on their wellbeing by accounting for respondents' age, education, income among other variables in the sampled population. As noted earlier, the qualitative nature and the absence of natural numerical values of the dependent variables called for the use of ordered logistic regression (the probabilities of each outcome conditional on the independent variables are modelled based on the cumulative normal distribution (Stock and Watson, 2007)). This model is appropriate due to its ability to identify statistically significant relationship between the

independent variables and the dependent variable. It also discerns unequal differences between ordinal categories in the dependent variable (Greene, 2002). Following the procedures of Greene and Hensher (2009), the ordered logistic model is expressed as:

$$Y_i = j \text{ if } \mu_{j-1} \leq Y_i^* < \mu_j \text{ for } j = 1, \dots, J \dots \dots \dots (1)$$

where the structural model is given by

$$Y_i^* = X_i\beta + \varepsilon, \varepsilon_i \sim L[0, \pi^2/3)], i = 1, \dots, n \dots \dots \dots (2)$$

and $\mu_0 = -\infty, \mu_j \leq \mu_{j+1}, \mu_m = \infty$. Given that the error term is logistically distributed, the probability of observing a particular value of Y_i is given by:

$$P(Y_i = j|x) = P(\mu_{j-1} < Y_i^* \leq \mu_j |x)$$

$$P(Y_i = j|x) = P(\mu_{j-1} < X_i\beta + \varepsilon \leq \mu_j |x)$$

$$P(Y_i = j|x) = P(\varepsilon < \mu_j - X_i\beta |x) - P(\varepsilon \leq \mu_{j-1} - X_i\beta |x)$$

$$P(Y_i = j|x) = F(\mu_j - X_i\beta) - F(\mu_{j-1} - X_i\beta), \text{ for } j = 1, \dots, J \dots \dots \dots (3)$$

Further suppose that while we cannot observe Y_i^* , we instead can only observe the categories of response:

$$Y_i = 0 \text{ if } \mu_{-1} < Y_i^* < \mu_1,$$

$$Y_i = 1 \text{ if } \mu_0 < Y_i^* < \mu_1,$$

$$Y_i = 2 \text{ if } \mu_1 < Y_i^* < \mu_2$$

$$Y_i = \dots$$

$$Y_i = J \text{ if } \mu_{j-1} < Y_i^* < \mu_j.$$

Then, the ordered logistic technique will use the observations on Y_i , which are a form of censored data on Y_i^* , to fit the parameter vector. The variable Y_i^* is a continuous, unmeasured latent variable whose values determine what the observed ordinal variable Y_i (well-being measured in terms of ability to afford quality education, healthcare, quality three square meals, and how

comfortable respondents were in current accommodation) equals. The continuous latent variable has various thresholds points. In the ordered logistic model, $Y_i = j$ is the observed discrete outcome where as β is the vector of estimated parameters and X_i is the vector of explanatory variables. ε is the error term which is assumed to be logistically distributed (zero mean and non-constant variance) with the logistic distribution function denoted by $F(\bullet)$. The estimated threshold parameters are the μ_j (in which $\mu_j > \mu_{j-1}$ for positive probabilities) and n is the number of observations.

The threshold parameters (cut points) are used to differentiate the adjacent levels of the response variable (well-being). A threshold is referred to as points on the latent variable, continuous unobservable mechanism/phenomena that result in the different observed values on the proxy variable (the levels of ability to afford healthcare, daily meals, children's education, and comfortability in current accommodation used to measure the latent variable, i.e. well-being).

It must be emphasized that when using STATA 11.0, the actual values of the response variables are not relevant in the estimation of the parameters in ordered logistic. The larger values are taken to correspond to higher or better ability. Also, where the parameter has a positive value, it means that the explanatory variable improves the ratings.

3.1 Econometric Estimation

The four ordered logistic regression models were estimated under this section. These are:

- Model 1 (Impact of loans or credits access on women's ability to afford quality healthcare)

- Model 2 (Impact of loans or credits access on women's ability to afford children's education)
- Model 3 (impact on loans or credits access on ability to afford three square meals daily)
- Model 4 (impact on loans or credits access on comfortability in accommodation)

3.3.1 Model 1

This model had the purpose of finding out the effect of education, income, age, employment status, and most importantly credits received by women on their ability to afford quality health care. Thus, the study was interested in finding out whether or not the loans or credits have had a positive impact on the wellbeing (i.e. whether credits have improved their ability to afford quality healthcare) of women who accessed such loans.

Let Y_i (ordinal response variable) represent the observed response of each woman (i^{th} observation) and Y_i in turn, is a function of another variable, Y^* , that is not measured. Therefore, it follows that: $Y_i = f(Y_i^*)$, for f is the functional relationship that exist between a woman's ability to afford quality healthcare, Y_i , and the unmeasured latent variable, Y_i^* , whose values determine what the observed ordinal variable Y equals. The continuous latent variable Y_i^* has various threshold points. The general estimated model is given as:

$$Y_i^* = \beta_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15} + \varepsilon_i \rightarrow 1$$

For Y_i^* = ordered dependent variable (ability to afford quality healthcare) coded as 1, 2, 3, 4 (very low, low, high, and very high respectively), and

$$X_2 = \text{Age}$$

X_3 = Monthly Income

X_4 = Dummy variable ($X_4 = 1$ if employed, $X_4 = 0$ if unemployed)

X_5 = Dummy variable ($X_5 = 1$ if basic education, $X_5 = 0$ if otherwise)

X_6 = Dummy variable ($X_6 = 1$ if senior high education, $X_6 = 0$ if otherwise)

X_7 = Dummy variable ($X_7 = 1$ if tertiary education, $X_7 = 0$ if otherwise)

X_8 = Dummy variable ($X_8 = 1$ if uneducated, $X_8 = 0$ if otherwise)

X_9 = Dummy variable ($X_9 = 1$ if a respondent received credit/loan, $X_9 = 0$ if a respondent did not receive loan)

X_{10} = Dummy variable ($X_{10} = 1$ if a respondent was married, $X_{10} = 0$ if otherwise)

X_{11} = Dummy variable ($X_{11} = 1$ if a respondent was single, $X_{11} = 0$ if otherwise)

X_{12} = Dummy variable ($X_{12} = 1$ if a respondent was divorced, $X_{12} = 0$ if otherwise)

X_{13} = Dummy variable ($X_{13} = 1$ if a respondent was widowed, $X_{13} = 0$ if otherwise)

X_{14} = Dummy variable ($X_{14} = 1$ if a respondent was separated, $X_{14} = 0$ if otherwise)

X_{15} = Number of dependants that a woman has

ε_i = Stochastic error term.

3.3.2 Model 2

The second model also accounts for the effect of education, income, age, employment status, and credits or loans accessed on a woman's ability to afford children's education. The model is presented below:

Let Y_i (ordinal response variable) represent the observed response of each respondent (i^{th} observation) and Y_i in turn, is a function of another variable, Y^* , that is not measured. Therefore, it follows that: $Y_i = f(Y_i^*)$, for f is the functional relationship that exist between ability to afford

children's education, Y_i , and the unmeasured latent variable, Y_i^* , whose values determine what the observed ordinal variable Y equals. The continuous latent variable Y_i^* has various threshold points. Hence,

$$Y_i^* = X_i\beta \rightarrow 2$$

Here, Y_i^* is the ordered dependent variable (ability to afford children's education) coded as 1, 2, 3, 4 (very low, low, high, and very high respectively) and X_i is a vector of explanatory variables which are the same as the explanatory variables presented in model 1 above.

3.3.3 Model 3

The third model is the same as the model presented in model 1 and 2, except the response variable. The response variable is the respondent's ability to afford three meals daily. The model is presented below:

$$Y_i^* = X_i\beta \rightarrow 3$$

Here, Y_i^* is the ordered dependent variable (ability to afford three squared meals daily) coded as 1, 2, 3, and 4 (very low, low, high, and very high respectively) and X_i is a vector of explanatory variables and same as those presented in models 1 and 2 above.

3.3.4 Model 4

The fourth model is the same as the model presented in model 1 and 2, except the response variable. The response variable is the respondent's comfortability in current accommodation.

The model is presented below:

$$Y_i^* = X_i\beta \rightarrow 4$$

Here, Y_i^* is the ordered dependent variable (comfortability in current accommodation) coded as 1, 2, 3, and 4 (very uncomfortable, uncomfortable, comfortable, and very comfortable respectively) and X_i vector of explanatory variables presented in models 1 above.

In all the above models, indicator or dummy variables were created for the qualitative variables like employment status, education, marital status, and loans accessibility. For example, the coding was 1 if one was employed and zero for unemployed. All other dummy variables were created in a similar manner. This led to the controlled groups (ie unemployed, married, uneducated and those who did not access loans or credits). Also, the following questions formed the basis for comparison.

- ✓ Whether women who received credits from MFI are better off than non recipients.
- ✓ How many dependants they had.
- ✓ Whether they were employed or not.
- ✓ Whether or not the women were educated and if yes, the level of education

3.4 Expected Signs of the Parameter Estimates

The impact of age on one's ability to afford quality healthcare, three square meals per day children's education, and comfortability in current accommodation (herein referred to as well-being) is unknown and so is its sign. This is because somebody can be older and yet has a lower ability to for afford quality healthcare, daily meals, children's education, or be uncomfortable in current accommodation. Thus it is unknown whether one's years would impact positively or not on women's well-being (in models 1, 2, 3 and 4).

Again, income is expected to impact positively on one's wellbeing in all the models presented.

This is because as one's income rises, he is able to afford and consume different kinds of

commodities (services) which also consist of healthcare, quality meals, education and comfortable accommodation. In this case, income is expected to have a positive sign on all the response variables.

The impact of employment status on one's ability to afford quality healthcare is expected to be positive on all the dependent variables. This is because when a woman is employed she is able to afford quality healthcare, consume three square meals in a day, or even be comfortable in her current accommodation than those unemployed. Also, employment is expected to impact positively on parents' ability to buy quality education for their wards. The unemployed were used as the control group and the parameter of the employed was compared to that of the controlled group (unemployed).

Furthermore, women who have received credit or loans from MFIs are expected to have a better well-being, i.e. their ability to afford quality healthcare services, meals, children's education, and comfortability in current accommodation. This is because; such monies or credits are expected to improve their economic condition. Women who have not received loans or credits were used as the control group. Hence, the sign of loans or credit facilities will be positive on all the well-being measures presented earlier.

However, the number of dependants that a woman has will reduce her ability to afford quality healthcare, meals, children's education, and her comfortability in her current accommodation. This is because when the number of dependants increase, the cost of healthcare, education, and food also increases for the woman, hence her ability to afford these commodities falls. It also reduces her comfortability in her current accommodation. In this case, the sign of dependants is expected to be negative on all the response variables of well-being.

Concerning education, it is expected that education would impact positively on one's well-being (i.e. measures presented in models 1, 2, 3 and 4). This stems from the fact that education helps in providing better and well-paid job and as such boost income. Therefore education is expected to be positive on all the various well-being measures presented earlier. Uneducated women were used as the control group.

Finally, the impact of marital status on the well-being (i.e. ability to afford quality healthcare, children's education, three square meals a day, and comfortability in current accommodation) of women is unknown. This is due to the fact that some unmarried women are better off than their counterparts who are married. In some cases too, married women have improved well-being than those unmarried. Married women were used as the control group. This is because most married women are assumed to have support from their husbands and that the effect of loans or credits on unmarried women would be higher. Therefore, the sign of marital status is unknown in this study.

3.5 Data Analysis

In order to know the effect of microfinance (microcredits) on the wellbeing of women in the district, measured in terms of their ability to afford quality healthcare, children's education, three square meals daily, and comfortability in current accommodation, quantitative methods were used. This is because quantitative methods provide sufficient information about the relationship between the variables under investigation to enable prediction and control over future outcomes (Cormack, 1991). The extensiveness of attitudes held by people is also achieved. It also makes statistical comparison between various groups' possible, measures level of occurrence, actions, trends, etc. and forms the framework for actual estimates of the degree of

relationships between variables (Sukamolson, n.d). The dependent variables being studied are ordinal hence the choice of ordered logistic regression technique as the empirical method of estimation under the quantitative method. Other variables such as type of service, education, income, age, etc were analysed descriptively using frequency tables.

3.6 Background of the Study Area

The Atwima Mponua District was carved out of the Atwima Nwabiagya District, as one of the 28 newly-created district assemblies established by Legislative Instrument (L.I. 1785) of 2004.

The district is situated in the western part of the Ashanti Region, with Nyinahin as its capital.

The population of the district as at the 2010 census was 119,180 representing 2.5% of the total population of the region. Out of the total of 119,180 people, 104,360 and 14, 820 people are rural and urban dwellers respectively.

The 2010 census puts female population in the district at

58,090. The District Assembly comprises 35 electoral areas and 11 area Councils, with some of

its major settlements being Mpasatia, Otaakrom, Tano-Odumase and Anwiafutu. The people are

mostly farmers, and about 75% of the labour force work in the agricultural sector. Concerning

financial institutions, there are two rural banks (Amanano Rural Bank at Nyinahin, and Atwima

Rural Bank at Mpasatia) and some microfinance firms (i.e. Lord Winners InveFinancial Services

and BCL Microfinance Limited all at Nyinahin) which facilitate economic and financial services.

Women are the major target group since they form the bulk of client base of these microfinance

firms. With the exception of Nyinahin and Mpasatia, which enjoy pipe-borne water, the

remaining communities rely on bore-holes, hand dug wells, streams and rivers for sources of

drinking water. The district boasts of 11 health facilities in five sub-district locations. These are

the Nyinahin District Hospital, Barniekrom Maternity Home, Bayerebon Health Centre under

Nyinahin, the Sreso Health Centre at Sreso-Tinpom, Saakrom Health Centre, Victory Maternity

Home at Mpasatia, Community Health Clinic Mpasatia, The Word Maternity Home at Anyinamso, under Saakrom sub-district, as well as the Gyereso Health Centre, Anglican Health Centre at Tano-Odumase, Kotokuom Health Centre and the St. Peter's Clinic at Ntoboroso. The district has 36 nursery/kindergarten schools, 94 primary schools, 43 Junior High schools (JHS) in the public sector, while the private schools have a nursery and kindergarten, nine primary and two JHS. According to the Ghana Education Service statistics (Nyinahin), the district has only two Senior High Schools and a Technical/Vocational (ICEES). The district is very heterogeneous in the sense that it has people with almost all the features of the people in the other regions of Ghana living in it (www.ghanadistricts.com).

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.0 Introduction

This chapter presents the descriptive and quantitative analysis of the data used in the study. It also presents the analysis of the regression results and comprises of the data obtained from 400 women in the informal sector in both the descriptive statistics and the quantitative aspect which was coded into STATA 11.0 for it to be analysed. Ordered logistic regression estimates were used to find out the impact of age, income, employment status, education, access to credits, and marital status on the well-being of women measured in terms of their ability to afford quality healthcare, children's education, three daily squared meals, and comfortability in current accommodation.

4.1 Descriptive Analysis

Table 4.1., reveals the demographic and socio-economic characteristics of the respondents in the study area.

Table 4.1: Descriptive Statistics

Variable	Mean value	Std. Dev.	Min. value	Max. Value
Age	41.86	12.27261	23	70
Income (monthly)	226.395	162.5403	70	520
Number of dependants	3.05	2.940939	0	14
Months with MFI	6.039216	4.642748	1	24
Credit received	1480.357	1680.181	300	8000
Freq. of service use	2.797101	1.130938	1	5

Source: Field Survey, 2013

It shows the age structure of the sampled women ranged between 23 years and 70 years. On average, a respondent was aged 42 years (approximated). Concerning their income levels, the lowest earner in the sample earned an amount of GH¢70.00 per month while the highest earner received an amount of GH ¢520.00 per month. On the average, a respondent earned an average income of GH¢226.40. The study also investigated the number of dependants a respondent had and it was revealed that a woman had 3 dependants on the average. The highest number of dependants for a woman was 14 while others did not have any dependant as at the time of this study. For those who were clients of MFIs, the average months that they have conducted business with those MFIs was six months (approx.). The minimum months of stay were a month while the maximum was twenty-four months. Few women (49% of the respondents) had taken loans from their MFI. The highest amount received as loan was GH¢8000 whilst the lowest was GH¢300 with an average of GH¢1480.36 for a respondent.

Table 4.2: Occupation of Respondents

Variable	Percentage of Respondents (%)
Employed	78
Occupation	
- Farmers	18.59
- Traders	65.71
- Artisan	15.71

Source: Field Survey, 2013

Most of the respondents sampled were actively engaged in economic activities. This constituted 78% of the total sample while 22% were unemployed. Their economic activities were farming, trading and artisanal works. For those who were employed, 18.59% were farmers, 65.71% were also traders while 15.71% were artisans (e.g. hairdressing, bread-baking, seamstress, etc.)

Table 4.3: Education of the Respondents

Variable	Percentage of Respondents (%)
Education	
- Uneducated	16.75
- Basic	56.00
- SHS/ A' Level	16.75
Tertiary	10.50

Source: Field Survey, 2013

On their educational background, most of the women were educated. Few were uneducated and this consisted of 16.75% of total respondents. The rest have had secondary or vocational, tertiary and basic education training. This represented 16.75%, 10.5%, and 56% respectively.

Table 4.4: Marital Status of Respondents

Variable	Percentage of Respondents (%)
Marital Status	
- Single	21
- Married	54
- Divorced	13
- Widowed	12

Source: Field Survey, 2013

Concerning marital status, most of the respondents, representing 54%, were married. Others said they were single, divorced, or widowed and this comprised of 21%, 13% and 12% respectively. There were no separated women among the respondents.

Table 4.5: Products Patronised of Respondents

MFI clients	51
Services used/ Products Patronised	
- Savings and/or Susu	71.08
- Money transfers	57.84
Micro-pension	46.57

Source: Field Survey, 2013

With regards to the usage of Microfinance services, out of the 400 respondents, 51% were clients of Microfinance institutions. The remaining 49% were not utilising such services. Some of the reasons for non participation were higher interest, non-flexible payment terms, and that they don't trust these MFIs. For those who were clients of MFIs, 71.08% had saving (or susu) account with their MFI. Others were receiving and transferring funds to their relatives, children's in other parts of the country while others received their remittances from abroad via these MFIs and this constituted 57.84% of the respondents who were clients of MFIs. Again, some of the respondents said they were using micro-pensions where they deposit some amount on a monthly basis towards their old age and they represented 46.57% of the MFI client group.

Table 4.6: Loan Purpose of Respondents

Variable	Percentage of Respondents (%)
Accessed Loan	49
What loans were used for	
- Start or expand business/farm activities	63.27
- Housing projects/other accommodation purposes	8.16
- Domestic purpose (e.g. school fees, utility bills)	28.57

Source: Field Survey, 2013

On the issue of access to credit or loans, 49% of the respondents had received credit or accessed loans from MFIs. They were also asked of what they used their loans or credits for. Majority of the women indicated that they had taken the loans to start and/or expand their farms (in the case of farmers), businesses activities (for traders). This represented 63.27% of loan beneficiaries. In addition, some beneficiaries used their funds on housing projects and other accommodation purposes, and for domestic purposes (e.g. school fees, hospital bills, electricity, water etc). This represented 8.16% and 28.57% of the respondents who had access to loans respectively.

Table 4.7: Well-being of Respondents

Variable	Percentage of Respondents (%)
<i>Well-being as in ability to afford quality healthcare</i>	
- Very low	18.75
- Low	33.75
- High	38.50
- Very high	9.00
Children's education	
- Very low	34.75
- Low	34.50
- High	26.50
- Very high	4.25
Three meals a day	
- Very low	21.00
- Low	32.50
- High	29.25
- Very high	17.25
Comfort in current Accommodation	
- Very uncomfortable	14.00
- Uncomfortable	15.25
- Comfortable	55.00
- Very comfortable	15.75

Source: Field Survey, 2013

The respondents were asked to rate their well-being as measured in terms of their ability to afford quality healthcare, children's education, three square meals a day, and their comfortability in current accommodation. On healthcare affordability, most of the women rated their ability to be low while others rated theirs to be very low. This represented 18.75% and 33.75% respectively. Again, 38.5% and 9% rated their ability to afford quality healthcare to be high and very high respectively.

Concerning children's education, 34.75% and 34.5% of the respondents rated their ability to afford quality education for their children to be very low and low respectively. For those who rated their ability to be high and very high, they represented 26.5% and 4.25% respectively.

In relation to their ability to afford quality three square meals a day, most of the respondents rated their ability to be very low and low. This represented 21% and 32.5% respectively. Others also rated their ability to afford quality meals to be high and very high representing 29.25% and 17.25% respectively.

Finally, the respondents were asked to rate how comfortable they were in their current accommodation. The study revealed that 14% and 15.25% of the sampled women were very uncomfortable and uncomfortable in their current accommodation respectively. Majority of the sampled women said they were comfortable and very comfortable in their current accommodation. This represented 55% and 15.75% respectively of the total sample.

4.2. Analysis of Regression Results

In this section, the study presents the Ordered Logit Results and these are model 1, model 2, model 3 and model 4.

In the analysis of the regression results, a positive sign of an estimated coefficient means that increases in that particular variable improves the dependent variable in question and a negative coefficient means otherwise. Also, the significance of a coefficient is determined by the p – value of that particular coefficient (parameter). The parameter is significant at 5% error level when p – value is below 0.05. The overall test of significance, for each model, is based on Likelihood Ratio whose p – values should be below 0.05 for a particular model to be significant at 5% error level.

Table 4.8: Women's access to loans or credits on Quality Healthcare

The results of the ordered logistic regression using ability to afford quality healthcare as the response variable is presented in the table below.

Explanatory variable	Coefficient	P-value
Age	-.004551	0.627
Income	.0014639	0.015
Number of dependants	-.144837	0.000
Employed	1.144686	0.000
Accessed Loan or credit	.5948602	0.005
Education		
- Basic	.3230395	0.222
- Secondary/Vocational	1.12136	0.001
- Tertiary education	.7170296	0.063
Marital status		
- Single	-.7971838	0.055
- Divorced	-.5897286	0.008
- Widowed	.1891388	0.571
Cut1	-.5866078	
Cut2	1.323695	
Cut3	3.762644	

Number of obs = 400, LR chi2 (11) = 97.85, Prob > chi2 = 0.0000, Pseudo R² = 0.0967

4.2.1 Regression Results (Model 1)

The model was statistically significant at 5% error level since the p-value was below 0.05. Most of the explanatory variables were not significant in influencing one's ability to afford quality healthcare. These variables were age, education (except secondary) and marital status (except divorced women). The sign of education (basic, secondary, and tertiary) met the study's expectation.

Other variables in the model were statistically significant in impacting one's ability to afford quality healthcare since their p-values were below 0.05. These variables were income, access to loans or credits, number of dependants, employment status and education (secondary or vocational) and marital status (divorced).

Of particular interest was the impact of loans or credits accessed on women's ability to afford quality healthcare. As seen from the results, access to credits or loans had a positive significant impact on their ability to afford quality healthcare, i.e. $p\text{-value} = 0.005$. Thus women who received credits had improved well-being with regards to ability to afford quality healthcare as compared to those who had not (control group). Thus the loans had helped them to improve their ability to afford quality healthcare. This is similar to the findings of Adjei et al (2009) and Pitt et al (2003), who found that credit programs for the poor, particularly women improves health status through their improved ability to pay, and thereby improving their livelihoods.

As the results show, an increase in income tends to improve one's ability to afford quality healthcare. This is because, as one's income rises she is able to afford medical care, e.g. consultation services, laboratory, pharmaceutical services among others. Again, the number of

dependants that a woman had impacted negatively on her well-being measured in terms of her ability to afford quality healthcare. Thus as one's dependants rises, the overall budget also rises which works to lower her ability to afford quality healthcare. This puts women with more dependants in a very poor economic condition.

Furthermore, those employed had improved well-being in relation to their ability to afford quality healthcare. Thus, women who were employed had higher ability to afford quality healthcare. Employment status was significant ($p = 0.000$) influencing one's ability to afford quality healthcare. This suggests that if somebody is employed she will be able to afford quality healthcare as compared to those women who were unemployed (Control group). Also, women who were divorced were severely affected as compared to those who were married (control group). Thus divorced women had lower ability to afford quality healthcare as compared to those who were married (control group). This could be due to the single parent role imposed on them. There was no difference in ability to afford quality health care for married women and those who were unmarried (single or widowed) since their p-value were above 0.05.

In addition, women who secondary or vocational education had had higher ability to afford quality healthcare as compared to the uneducated (control group).

Table 4.9: Women's access to loans or credits on Quality Education for their Children

In the Table 4.4, the well-being of women specifically their ability to afford quality education for their children was also considered.

Explanatory variable	Coefficient	P-value
Age	.0214032	0.028
Income	.0025546	0.000
Number of dependants	-.1945315	0.000
Employed	.8665331	0.001
Accessed Loan or credit	.7360766	0.001
Education		
- Basic	-.0817014	0.769
- Secondary/Vocational	.7722568	0.023
- Tertiary education	1.874774	0.000
Marital status		
- Single	-.1477992	0.614
- Divorced	-.2886589	0.396
- Widowed	-.1799953	0.584
Cut1	1.364459	
Cut2	3.215144	
Cut3	5.827724	

Number of obs = 400, LR chi2 (11) = 125.68, Prob > chi2 = 0.0000, Pseudo R² = 0.1287

4.2.2 Regression Results (model 2)

Here, the response variable was one's ability to afford quality education for her children. The independent variables were income, number of dependants, education, employment status, access to loans or credits, and marital status. For the qualitative independent variables, the uneducated, unemployed, married women, women who did not access loans were controlled. Most of the variables were statistically significant at 5% level (p-value below 0.05) in influencing women's ability to afford quality education for their children. These statistically significant variables were income, employment status, age, number of dependants, access to credit or loans and educational level (tertiary and secondary education) of the respondents.

Of particular interest was the access to credit or loans and its impact on women's well-being in relation to their ability to afford quality education for their wards. As stated earlier, it was statistically significant (p -value = 0.001) and it met the study's expectation. This means that women who received loans or the credit facilities had higher or good ability to afford quality education for their wards than women who did not receive such credits (control group). Indeed, some of the women indicated that they had taken such loans to pay for the cost related to their children's education. The implication is that loans or credits help the women in discharging their duties as parents with regards to securing their children's education. This confirms Arku and Arku (2009) and Marcus et al (1999) findings that microcredit help women to be actively involved in their children's education.

The sign of income was positive and met the expectation of the study. Thus, as income rises, it improves a woman's ability to afford quality education for her children. Thus, women with higher income had higher ability to afford quality education for their wards in the sample.

The sign of those employed was positive and it met the expected sign of the study. Thus, women who were employed at the time of the study had higher ability to afford quality education for their wards as compared to the unemployed (control group) women in the sample. Age was significantly positive on ability to buy quality education and its sign was unknown prior to this study. Thus, as one's age increases by one, it improves or raises the likelihood of women's ability to afford quality education. The study also revealed that women who have had tertiary and secondary levels of education had higher ability or potential to provide quality education for their wards as compared to the uneducated women (control group). This could be attributed to the efficiency with which they managed their credits to make significant returns due to their levels of education.

Further, the number of dependants of a woman had a negative significant effect on women's ability to afford quality education for their wards ($p\text{-value} = 0.000$). This means that a rise in the number of dependants reduces women's ability to afford quality education for their wards. This results from the fact that budgets for the household rises with the rise in the number of dependants, particularly in cases where income is fixed.

Table 4.10: Women's access loans or credits on three Square meals a Day

Table 4.5 presents the regression results for model 3 on women's ability to access loans or credits to afford three square meals a day.

Explanatory variable	Coefficient	P-value
Age	.0245467	0.005
Income	.0017904	0.002
Number of dependants	-.0935781	0.009
Employed	.4195753	0.083
Accessed Loan or credit	.262933	0.194
Education		
- Basic	.7954886	0.003
- Secondary/Vocational	.2732052	0.404
- Tertiary education	.7877904	0.040
Marital status		
- Single	.1741708	0.550
- Divorced	.4063683	0.208
- Widowed	-.0315731	0.916
Cut1	.3894444	
Cut2	2.424866	
Cut3	3.952065	

Number of obs = 400, LR chi2 (11) = 43.73, Prob > chi2 = 0.0000, Pseudo R² = 0.0416

4.2.3 Regression Results (model 3)

The study was also interested in finding out the factors determining women's ability to afford three square meals in a day, particularly the effect of loans or credits access on such ability. In this regression, the response variable was ability to afford quality three square meals daily.

The explanatory variables were age, income, marital status, employment status, access to credit or loans, number of dependants, and the educational level of the women. It should however be noted that uneducated, married women, unemployed and women who did not receive loans were controlled. Most of the explanatory variables were significant at 5% level (p-value was below 0.05) in terms of their ability to afford quality meals in a day. These variables were age, income, number of dependants, and education (except secondary or vocational). The model was also statistically significant ($Prob > chi2 = 0.0000$). Thus, at least one of the coefficients was not equal to zero. The study has revealed that age improves one's ability to afford quality meals daily. This is because its positive sign was significant at 5% error level. The implication is that as one advances in age, her ability to afford quality meals improves.

It should however be noted that access to credit or loans and marital status didn't have any statistically significant effect on women's ability to afford quality meals. The sign of access to credits or loans was expected and is in line with the view articulated by McNelly and Dunford (1999), while that for marital status was unknown. This suggests that married women and unmarried women as well as beneficiaries and non beneficiaries of loans were not different in their ability to afford quality meals.

Again, the positive sign of income on the affordability of quality meals was expected. Thus increases in income tend to improve women's ability to afford quality meals. The number of

dependants was also significantly negative on women's ability to afford daily meals (p -value = 0.002) and the sign was also expected. Thus as one's dependants reduces, it raises her ability to afford quality three square meals daily. This implies that women with more dependants were less likely to have a higher ability to afford quality meals for the household.

Concerning the impact of education on meals affordability, the study has revealed that education significantly affect one's ability to afford quality meals (p -value = 0.040 for tertiary, p -value = 0.003 for basic) and its sign corroborated the study's prior expectation. Thus women who have been educated up to the tertiary level had higher ability to afford quality meals in a day as compared to the uneducated. The situation was the same for those with basic education, who had a higher ability to afford quality meals than their uneducated counterparts (control group). Surprisingly, there was no difference between those with secondary or vocational level of education and the uneducated in terms of their ability to afford quality meals in a day.

Table 4.11: Women's access to loans or credits on Comfortability in Their Current Accommodation

In table 4.6, women's comfortability in their current accommodation was presented.

Explanatory variable	Coefficient	P-value
Age	.0478874	0.000
Income	.001325	0.039
Number of dependants	-.1688018	0.000
Employed	-.0594209	0.819
Accessed Loan or credit	1.127423	0.000
Education		
- Basic	.6170506	0.024
- Secondary/Vocational	1.042467	0.002
- Tertiary education	.8397691	0.034
Marital status		
- Single	.155344	0.587
- Divorced	.2653707	0.417
- Widowed	-.0006254	0.999
Cut1	.7959065	
Cut2	1.886636	
Cut3	4.914941	

Number of obs = 400, LR chi2 (11) = 92.84, Prob > chi2 = 0.0000, Pseudo R² = 0.0982

4.2.4 Regression Results (model 4)

Another objective of the study was to find out the levels of comfort for women in their current accommodation, and whether microcredit affects such comfortability. Similar to other regressions, the response variable was comfortability in current accommodation.

Again, the explanatory variables were age, income, marital status, employment status, access to credit or loans, number of dependants, and the educational level of the women. The model was also statistically significant ($Prob > \chi^2 = 0.0000$). As stated earlier, at least one of the coefficients was not equal to zero. Also, most of the explanatory variables were statistically significant at 5% level (p-value was below 0.05) in terms of their impact on the level of comfortability in their current accommodation. These variables were age, income, number of dependants, and education (basic, secondary, and tertiary). However, marital and employment status were not statistically significant at 5% error level since their p-values were above 0.05.

Concerning access to credit or loans and its impact on comfortability in current accommodation, the study revealed that women who accessed loans were more likely to be comfortable in their current accommodation than women who did not receive loans (control group). This is because loans or credits accessed was significantly positive (p-value = 0.000). Thus, the loan beneficiaries were better off in their accommodation than non-beneficiaries (control group). As stated earlier, most of the loan beneficiaries had used their credits for housing projects and/or accommodation purposes (e.g. furnishing, providing household items, or even pay rent advances).

The study has revealed that age improves one's level of comfort in her current accommodation. This stems from the fact that its positive sign was significant at 5% error level, i.e. p-value of 0.000 was below 0.05. The implication is that as one advances in age, she becomes more comfortable in her current accommodation.

Again, the study revealed that income had positive significant impact on the level of comfortability in current accommodation. This is because as one's income rises she is able to afford decent accommodation for herself. Also, the number of dependants was also significantly negative on women's level of comfortability in current accommodation (p value = 0.000). The implication is that women with more dependants were less likely to be very comfortable in their current accommodation.

With regards to the impact of education on comfortability in current accommodation, the study has revealed that education significantly affected one's level of comfort in her residence (p-value = 0.024 for basic, p-value = 0.002 for secondary, and p-value = 0.034 for tertiary). Thus, women who have had at least basic education were more comfortable in their current accommodation as compared to those who were uneducated (control group).

It should however be noted that employment status, and marital status didn't have any statistically significant effect on women's level of comfort in their residence. The implication is that there was no difference in the level of comfort in accommodation for unmarried women (single, divorced, and widowed) and married women. The same can be said of women who were employed and those unemployed (control group) at the time of this study.

4.3 Thresholds Parameter Interpretation in the Ordered Logistic Models.

In the ordered logistic model estimated, well-being, y is an observed dependent variable. Well-being, y is a function of a continuous, unmeasured latent variable y^* whose values determine what the observed ordinal variable y (well-being of women) equals. The continuous latent variable y^* has various thresholds points (i.e. Cut1, cut2, and cut3 in the Tables 4.3, 4.4, 4.5 and 4.6 above). A respondent value on the observed variable y (well-being) depends on whether or not that respondent has crossed a particular threshold.

Ability to afford quality healthcare, children's education and quality three square meals were coded as 1, 2, 3, and 4 (very low, low, high, and very high respectively). Again, comfortability in current accommodation was also coded as 1, 2, 3, and 4 representing very uncomfortable, uncomfortable, comfortable, and very comfortable respectively. There are four possible values for ability to afford quality healthcare, children's education and quality three meals daily as well as comfortability in current accommodation. Therefore, in **section 4.2.1**, for example:

$y = \text{very low if } y^* \leq -.5866078$

$y = \text{low if } -.5866078 \leq y^* \leq 1.323695$

$y = \text{high if } 1.323695 \leq y^* \leq 3.762644$

$y = \text{very high if } y^* \geq 3.762644$

The above implies for example in section 4.2.1, that:

Cut1 is the estimated cut point on the latent variable used to differentiate very low ability to afford quality healthcare services from low, high, and very high abilities when values of the independent variables are evaluated at zero. This means that women with a value of $-.5866078$ or less on the underlying latent variable that gave rise to quality healthcare affordability variable would be classified to have a very low ability to afford quality healthcare services.

On the other hand, Cut2 is the estimated cut point on the latent variable used to differentiate very low and low ability to afford quality healthcare services from high and very high abilities when values of the independent variables are evaluated at zero. Similarly, women having a value between $-.5866078$ and 1.323695 on the underlying latent variable would also be classified to have low ability to afford quality healthcare services.

Similarly, Cut3 is the estimated cut point on the latent variable used to differentiate very low, low, and high abilities to afford quality healthcare services from very high ability to afford quality healthcare services when values of the independent variables are evaluated at zero. Women having a value between 1.323695 and 3.762644 on the underlying latent variable would be classified as to have high ability to afford quality healthcare services. Respondents or women whose value falls within 3.762644 or higher on the underlying latent variable would be classified to have a very high ability to afford quality healthcare services. The arrangements and interpretations for the cuts are derived the same way for Tables 4.4, 4.5, and 4.6 respectively.

4.4 Conclusion

This chapter analysed the regression results from the econometric model of estimation. It also looked at the descriptive analysis of the study. The econometric model showed that women's ability to access loans or credits have positive impact on their well-being.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This study was carried out basically to find out the impact of microfinance, particularly credits or loans, on the well-being of women in the Atwima Mponua District of Ghana. This chapter presents a summary of major findings of this study as well as conclusions and policy recommendations from the entire study.

5.1 Summary of major findings

The study revealed that most women (78% of the sample) were employed. These women in the informal sector are mostly traders representing 65.71% of those employed. Also, most of the respondents were married and they represented 54% of the sampled.

Again, it has been revealed by the study that most of the women utilize microfinance services, 51% of the respondents said they were clients of Microfinance institutions. Non participants attributed their decision to higher interest, non-flexible payment terms with regards to credits, and that they don't trust these MFIs. The clients of MFIs utilised services like savings (and/or susu) accounts (71.08%), money transfers (57.84) and micro-pensions (46.57%) of clients' responses.

It was found that, those who were beneficiaries of credit facilities used the loans for the purpose of starting and/or expanding their farms (in the case of farmers) or businesses activities (for traders). This represented 63.27% of loan beneficiaries. Some beneficiaries used their credits on housing projects, and for domestic purposes (e.g. school fees, hospital bills, electricity, water etc). This represented 8.16% and 28.57% respectively.

Finally, the respondents were asked to rate their well-being as measured in terms of their ability to afford quality healthcare, children's education, and three square meals a day as well as how comfortable they were in their current accommodation.

First on their ability to afford quality healthcare, the study revealed that income, employment, secondary education and access to credits had a positive significant impact on women's ability to afford quality healthcare.

The study also revealed that the number of dependants that a woman had impacted negatively on her well-being measured in terms of her ability to afford quality healthcare, three squared meals a day, children's education, and comfortability in current accommodation. Similarly, women who were divorced were severely affected (in relation to their ability to afford quality healthcare) as compared to those who were married. The divorced women had lower ability to afford quality healthcare as compared to those who were married.

On the ability to afford quality education for children, income, employment status, age, number of dependants, access to credit or loans and educational level (tertiary and secondary education) of the respondents significantly impacted on their ability to afford quality education for their wards. Except the number of dependants which had a negative impact on women's ability, the rest of the variables impacted positively on their well-being.

Also, on the ability to afford quality meals in a day, age, income, number of dependants, and education (except secondary/vocational) were statistically significant in influencing women's ability to afford quality three squared meals daily. Again, the coefficients of these variables were positive except the coefficient for the number of dependants. There was no statistical evidence to show that access to credit had any impact on women's ability to afford quality meals.

Lastly, on the level of comfortability in current accommodation, age, income, number of dependants, credits, and education were statistically significant in influencing women's level of comfort in their current accommodation, and the signs of the coefficients of these variables were positive except the coefficient for the number of dependants.

5.2 Conclusion

The study concludes that women utilise the services of microfinance institutions but few had access to credit or loans. The women who had access to credits had improved well-being in relation to their ability to afford quality healthcare, children's education and comfortability in current accommodation. However, the positive effects of credits or loans on women's ability to afford three square meals daily were negligible. The objectives of the study were achieved. Microfinance has, indeed, positively affected the well-being of women in terms of their ability to afford quality healthcare, children's education and comfortability in current accommodation.

5.3 Recommendations

Since loans from the MFIs improve access to quality healthcare, education and comfortability in accommodation, policies must be adopted to encourage the MFIs to grant loans to women. This is because it has been proven that loans impacted positively on beneficiaries' well-being in terms of their ability to afford quality healthcare, children's education, and comfort in current accommodation.

Also, since educated women had improved well-being (ability to afford healthcare, children's education, and comfortability in current accommodation) than their uneducated counterparts (control group), MFIs should also be encouraged to provide informal education in the form of

periodic training, on small business management, book keeping, and other business related training relevant to their business, to their clients especially the uneducated. By this they would be able to manage their businesses and finances well. Again, there should be an affirmative action to encourage women to have formal education to at least secondary level to improve their well-being.

Also, since income has been found to improve the well-being of women, policies should be aimed at raising the income levels of women. Therefore, policies should be aimed at job creation for women and thereby increasing their incomes.

Also, women should be encouraged to reduce the number of children they give birth to. This is because of the proven negative impact of the number of dependants (children) on well-being (in terms of ability to afford quality healthcare, meals, children's, and the level of comfortability in current accommodation). Thus, women should be encouraged to adopt family planning practices in order to have few children.

5.4 Limitations of the Study

The major limitation of the study had to do with the sample size. The sample size used for the study was small. This was due to financial and time constraints. The ordered logistic model used in this study uses Maximum Likelihood Estimation (MLE) that requires a larger sample size for the efficiency and significance of the estimated parameters. Therefore, the statistical insignificance of some of the estimated parameters could be as a result of the small sample size.

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Appendix 1

Questionnaire

Department of Economics

Kwame Nkrumah University of Science and Technology, Kumasi

Topic: Impact Assessment of Microfinance on well-being of Women in Ghana: A case in Atwima Mponua District

This questionnaire is designed to aid in the collection of data to enable me carry out a study on the above topic. It would be much appreciated if you could help answer these questions. The responses would be treated confidentially.

1. Age: []
2. Employment Status: Employed [1] Unemployed [2]
3. If employed, please indicate occupation: farming [1], Trading [2], Artisans [3]
4. a. Monthly Income: []
5. Educational level: None [0] Basic [1] Secondary [2] Tertiary [3]
6. Marital status: Single [1] Married [2] Divorced [3] Separated [] Widowed []
7. Do you utilize microfinance services? Yes [1] No [0]
8. If yes, which service (s)? Savings [1] Money transfer services [2] micro-pensions [3]
9. How many times do you access the service (s) you selected in 7 in a month []
10. Have you received credit (loan) from any Microfinance institution (MFI)? Yes [] No []
11. If yes, state the amount:.....
12. What did you use the credit for? Household expenditure e.g. food, electricity, water, health, etc [1] Start business venture/Farm [2] Expand existing business/Farm (trading, etc) [3]

13. How would you rate your well-being in relation to your ability to afford the commodities/services in the table below?

Well-being	Ability Ratings			
	Very low	Low	High	Very high
Ability to afford quality healthcare				
Ability to afford quality education for children				
Ability to afford quality meals daily				

14. How do you rate your comfortability in current accommodation?

Very uncomfortable [] uncomfortable [], comfortable [] very comfortable []

Appendix 2

Descriptive Statistics of variables used in the study

Variable	Obs	Mean	Std. Dev.	Min	Max
AGE	400	41.86	12.27261	23	70
No.of depend.	400	3.05	2.940939	0	14
income	400	226.395	162.5403	70	520
frequencyo~e	204	2.784314	1.132828	1	5
Monthswith~I	204	6.039216	4.642748	1	24
AMOUNTGIVEN	196	1480.357	1680.181	300	8000

summarize EMPLOYMENT OCCUPATION EDUCATION MARITALSTATUS Credits or loan MFISAVINGS

> moneytransfers micropension MFIUSAGE AMOUNTGIVEN LOANPURPOSE

Variable	Obs	Mean	Std. Dev.	Min	Max
EMPLOYMENT	400	1.22	.4147651	1	2
OCCUPATION	312	1.971154	.585847	1	3
EDUCATION	400	2.21	.8442048	1	4
MARITALSTA~S	400	2.28	1.159725	1	5
Creditsorl~n	400	.49	.500526	0	1
MFISAVINGS	204	.7107843	.4545136	0	1
moneytrans~s	204	.5784314	.495025	0	1
micropension	204	.4656863	.5000483	0	1
MFIUSAGE	400	.51	.500526	0	1
AMOUNTGIVEN	196	1480.357	1680.181	300	8000
LOANPURPOSE	196	1.653061	.8955965	1	3

Appendix 3

Results of ordered logistic regression

Ordered logistic results for quality healthcare affordability

Iteration 0: log likelihood = -505.86473

Iteration 1: log likelihood = -458.26304

Iteration 2: log likelihood = -456.94602

Iteration 3: log likelihood = -456.94039

Iteration 4: log likelihood = -456.94039

Ordered logistic regression

Number of obs = 400

LR chi2(11) = 97.85

Prob > chi2 = 0.0000

Pseudo R2 = 0.0967

Log likelihood = -456.94039

AFFORDHEAL~E	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
AGE	-.004551	.0093774	-0.49	0.627	-.0229304	.0138285
NUMBEROFde~s	-.144837	.040224	-3.60	0.000	-.2236746	-.0659993
income	.0014639	.0006044	2.42	0.015	.0002794	.0026485
EMPLOYED	1.144686	.2513057	4.55	0.000	.6521362	1.637236
RECEIVEDCR~T	.5948602	.2095736	2.84	0.005	.1841035	1.005617
BASIC	.3230395	.2645002	1.22	0.222	-.1953714	.8414504
SHS	1.12136	.3275023	3.42	0.001	.4794676	1.763253
TERTIARY	.7170296	.3863889	1.86	0.063	-.0402788	1.474338
SINGLE	-.7971838	.3016209	-2.64	0.008	-1.38835	-.2060177
DIVORCED	-.5897286	.3071325	-1.92	0.055	-1.191697	.01224
WIDOWED	.1891388	.3341134	0.57	0.571	-.4657115	.8439891
/cut1	-.5866078	.5228285			-1.611333	.4381172
/cut2	1.323695	.5237644			.2971357	2.350255
/cut3	3.762644	.5568376			2.671262	4.854025

Ordered logistic results on women's ability to afford quality education for their children

Iteration 0: log likelihood = -488.24376

Iteration 1: log likelihood = -426.97305

Iteration 2: log likelihood = -425.40312

Iteration 3: log likelihood = -425.40155

Iteration 4: log likelihood = -425.40155

Ordered logistic regression

Number of obs = 400

LR chi2(11) = 125.68

Prob > chi2 = 0.0000

Pseudo R2 = 0.1287

Log likelihood = -425.40155

ABILITYTOA~N	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
AGE	.0214032	.0097175	2.20	0.028	.0023573	.040449
NUMBEROFde~s	-.1945315	.0508714	-3.82	0.000	-.2942376	-.0948255
income	.0025546	.0006144	4.16	0.000	.0013504	.0037588
EMPLOYED	.8665331	.2728397	3.18	0.001	.3317771	1.401289
RECEIVEDCR~T	.7360766	.2149209	3.42	0.001	.3148394	1.157314
BASIC	-.0817014	.2780613	-0.29	0.769	-.6266915	.4632886
SHS	.7722568	.3384678	2.28	0.023	.1088721	1.435641
TERTIARY	1.874774	.3974075	4.72	0.000	1.095869	2.653678
SINGLE	-.1477992	.2926389	-0.51	0.614	-.7213609	.4257624
DIVORCED	-.2886589	.3398107	-0.85	0.396	-.9546757	.3773579
WIDOWED	-.1799953	.3289914	-0.55	0.584	-.8248066	.4648159
/cut1	1.364459	.5628641			.2612659	2.467653
/cut2	3.215144	.5817345			2.074965	4.355322
/cut3	5.827724	.6415682			4.570273	7.085174

Ordered logistic results on women's ability to afford quality square meals a day

Iteration 0: log likelihood = -525.90675
 Iteration 1: log likelihood = -504.24233
 Iteration 2: log likelihood = -504.0433
 Iteration 3: log likelihood = -504.04312
 Iteration 4: log likelihood = -504.04312

Ordered logistic regression	Number of obs	=	400
	LR chi2(11)	=	43.73
	Prob > chi2	=	0.0000
Log likelihood = -504.04312	Pseudo R2	=	0.0416

AFFORD3MEALS	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
AGE	.0245467	.0087619	2.80	0.005	.0073737	.0417197
NUMBEROFde~s	-.0935781	.0357592	-2.62	0.009	-.1636648	-.0234915
income	.0017904	.0005876	3.05	0.002	.0006388	.0029421
EMPLOYED	.4195753	.241803	1.74	0.083	-.0543498	.8935005
RECEIVEDCR~T	.262933	.2024557	1.30	0.194	-.1338728	.6597388
BASIC	.7954886	.2685262	2.96	0.003	.269187	1.32179
SHS	.2732052	.3272176	0.83	0.404	-.3681296	.9145399
TERTIARY	.7877904	.3834466	2.05	0.040	.0362489	1.539332
SINGLE	.1741708	.2913078	0.60	0.550	-.396782	.7451237
DIVORCED	.4063683	.3227264	1.26	0.208	-.2261639	1.0389
WIDOWED	-.0315731	.2993901	-0.11	0.916	-.6183668	.5552207
/cut1	.3894444	.4932843			-.577375	1.356264
/cut2	2.424866	.5076717			1.429848	3.419885
/cut3	3.952065	.5291119			2.915025	4.989106

ologit COMFORTINCURRAACCOMODATION AGE income EMPLOYED RECEIVEDCREDIT BASIC SHS
 <TERTIARY SINGLE DIVORCED WIDOWED NUMBEROFdependents

Iteration 0: log likelihood = -472.78727
 Iteration 1: log likelihood = -428.86542
 Iteration 2: log likelihood = -426.38303
 Iteration 3: log likelihood = -426.36572
 Iteration 4: log likelihood = -426.36572

Ordered logistic regression

Number of obs = 400
 LR chi2(11) = 92.84
 Prob > chi2 = 0.0000
 Pseudo R2 = 0.0982

Log likelihood = -426.36572

COMFORTINC-N	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
AGE	.0478874	.0096997	4.94	0.000	.0288764	.0668985
income	.001325	.0006419	2.06	0.039	.0000669	.0025831
EMPLOYED	-.0594209	.2591585	-0.23	0.819	-.5673623	.4485204
RECEIVEDCR-T	1.127423	.2217668	5.08	0.000	.6927683	1.562078
BASIC	.6170506	.272905	2.26	0.024	.0821667	1.151935
SHS	1.042467	.3396582	3.07	0.002	.3767491	1.708185
TERTIARY	.8397691	.39552	2.12	0.034	.0645642	1.614974
SINGLE	.155344	.2858814	0.54	0.587	-.4049732	.7156612
DIVORCED	.2653707	.326792	0.81	0.417	-.3751298	.9058712
WIDOWED	-.0006254	.3524008	-0.00	0.999	-.6913183	.6900675
NUMBEROFde-s	-.1688018	.0391111	-4.32	0.000	-.2454582	-.0921454
/cut1	.7959065	.5316716			-.2461507	1.837964
/cut2	1.886636	.5309989			.8458969	2.927374
/cut3	4.914941	.5886493			3.761209	6.068672