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DETERMINANTS OF ACCESSIBILITY OF LOANS BY HOUSEHOLD ENTERPRISES IN DEVELOPING COUNTRIES: EVIDENCE FROM GHANA

BY

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DECLARATION

I, Danny Turkson, the author of this thesis, hereby declare that apart from the references made to other studies, which I have duly acknowledged, the work presented in this thesis "DETERMINANTS OF ACCESSIBILITY OF LOANS BY HOUSEHOLD ENTERPRISES IN DEVELOPING COUNTRIES: EVIDENCE FROM GHANA" was entirely done with my effort and was undertaken in the Department of Economics, University of Ghana, (Legon), under the supervision of Prof. Peter Quartey and Dr. Emmanuel A. Codjoe. I bear sole responsibility for any shortcomings.

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ABSTRACT

The problem of access to loans faced by household enterprises (HEs) is the motivation for this study. The study examined the determinants of access to loans in the various financial sectors. The objective of this study was to identify the factors that influence HEs' access to loans in general and also their access to formal and informal loans, and also new strategies to finance HEs. The study focused on entrepreneurial characteristics and enterprise features that influence access to loans in Ghana.

The study employed an informal enterprise survey of 729 household enterprises conducted in 2013 by the World Bank in Ghana. The Heckman Probit regression with sample selection model was used to estimate the determinants of access to loans because of the possibility of sample selection bias. But the ordinary Probit Model was later used for the estimations since there was no existence of selection bias. The results for total loans revealed that entrepreneur's gender, household size, HE size and possession of assets are all positive significant factors that influence HEs' access to loans. For the formal financial market, the results showed that the determinants of formal loans are entrepreneur's experience, HE age, HE size and possession of asset. All these significant determinants of access to formal loans showed a positive relationship except HE age which indicated a negative relationship. Finally, the determinants of access to informal loans are entrepreneur's gender and household size.

In view of this, the study recommended that financial institutions should provide free training programs geared towards equipping HE entrepreneurs with the right loan application skills. Also, the government should formulate policies directed towards giving loans to female entrepreneurs in order for their HEs to move beyond survival to the place of growth and expansion. In addition, the government should provide loans for HEs in the transition from young to adulthood to enable such enterprises to cater for their sharp increase in cost.

DEDICATION

I dedicate this thesis to the Almighty God, to my parents Kingsley Turkson and Grace Osei-Tsibu, and my siblings Doris, Nancy, Ivan, Emmanuel, and Stephen.

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I give the Lord Jesus all the thanks for this thesis and also wish to express my profound gratitude to my supervisors Prof. Peter Quartey and Dr. Emmanuel A. Codjoe for their guidance and encouragement in producing this work. Special thanks to the World Bank Enterprise Analysis Unit for providing me with the relevant data for this work.

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LIST OF ABBREVIATIONS

ADB	Agricultural Development Bank
ARB	Association of Rural Banks
BACs	Business Advisory Centres
BOG	Bank of Ghana
CUs	Credit Unions
EGC	Economic Growth Centre
ISSER	Institute of Statistical Social and Economic Research
GDP	Gross Domestic Product
GLSS	Ghana Living Standard Survey
GSS	Ghana Statistical Service
HE	Household Enterprise
IFS	Informal Enterprise Survey
ILO	International Labour Organisation
LPM	Linear Probability Model
MASLOC	Microfinance and Small Loans Centre
ME	Micro Enterprise

MMDAs	Metropolitan, Municipal and District Assemblies
MSEs	Micro and Small scale Enterprises
MSMEs	Micro, Small and Medium-sized Enterprises
NBS	National Bureau of Statistics
NEIP	National Entrepreneurship and Innovation Plan
NGO	Non-Governmental Organisation
NVTI	National Vocational and Training Institute
PNDCL	Provisional National Defence Council Law
RCB	Rural and Community Bank
SEs	Small scale Enterprises
SMEs	Small and Medium scale Enterprises
SSA	Sub-Saharan Africa
WIEGO	Women in Informal Employment: Globalising and Organising

CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

The role of Household Enterprises (HEs) in the overall development of a nation cannot be exaggerated. They play an important part in poverty reduction and are vital to higher consumption. Haggblade et al. (2010) observed considerable evidence on the role HEs play in raising incomes in households through increased employment, and diversification of household income. The HE sector is responsible for many new non-farm jobs in many of the SSA countries, even in periods of high economic growth (Fox & Gaal, 2008). Employment in HEs is the rapid growing aspect of the economies in SSA countries undergoing growth and poverty reduction. These enterprises have been the solution to diversification by transforming labour from subsistence agriculture to non-agriculture activities (World Bank, 2012).

Despite the small scale nature of the operations of HEs, they continually have a significant role in poverty alleviation since they help poor people become less poor. According to Abor and Quartey (2010), HEs contributes immensely to employment generation, poverty alleviation and economic growth in most African countries. In addition, Bakeine (2009) acknowledged that the presence of a HE is a key element in lifting households out of poverty. The case of Ghana is not an exception. From 1991 to 2006, about 1 million new jobs were created by HEs out of the total of 2.8 million new jobs (World Bank, 2009). The HEs in Ghana are very important since they are viewed as a means of livelihood for households and are often seen as a complement to family farming.

Amidst all these contributions of HEs to developing countries, they face a lot of challenges of which numerous studies such as Bakeine (2009) and Quainoo (2011) indicated lack of start-up capital as a major bottleneck.

Finance serves as the core of every business and regulates its growth and survival (Aryeetey et al., 1994; Abor and Quartey, 2010). Loans are a major source of finance for enterprises, and they serve as a start-up capital to new businesses and an investment and working capital for already existing businesses. The HEs need loans to acquire assets and to cover for daily and operational expenses as well as the payment of remuneration (Quainoo, 2011). Improved access to loans gives HEs the capability and opportunities to expand and increase productivity since growth in employment and expansion in this sector tends to come from new enterprises springing up but not from the already existing ones (Fox & Sohnesen, 2012).

Most empirical studies have shown that inaccessibility of loans is a major impediment to HEs and MSEs in general, in both developed and developing countries particularly SSA countries (Beck and Cull, 2014; Aryeetey et al., 1994; Baah-Nuakoh, 2003). For instance, the National Bureau of Statistics (NBS) of Nigeria in partnership with the World Bank from its General Household Survey in 2010/2011 asserted that HEs in Nigeria have low capital stock, with more than 50 percent of these enterprises having a capital below 13,000 Naira ($87) and only a few of them have access to loans (NBS, 2011). In addition, a World Bank study revealed that 90 percent of HEs and MSEs surveyed stated loan acquisition to be the paramount setback to new investment (Parker et al., 1995). It has also been established that the reason for low growth and development of small enterprises is limited access to financial resources (Abor & Biekpe, 2006).

The major challenges HEs face in accessing loans include high interest rates, cumbersome paperwork and requirement of collateral to qualify for loans by formal financial institutions (Stephanou & Rodriguez, 2008; Bakeine, 2009; Quainoo, 2011; Alhassan & Sakara, 2014). These impediments have led to HEs resorting to informal lenders such as traditional money lenders, relatives and friends, 'susu' lenders and, savings and loans companies (Beck & Demirgüç-Kunt, 2005; Nkuah et al., 2013). Though the above challenges are faced by most enterprises, HEs are usually ignored and more attention is given to larger enterprises, and HEs tend to be more constrained. In addition, Fox and Sohnesen (2012) stated that:

> *"Household enterprises are usually ignored in low-income Sub-Saharan African development strategies"* (p.1).

This persistent inability to access loans among HEs has attracted many researchers, policymakers, and governments to make recommendations and put policies in place to finance HEs (Kayanula & Quartey, 2000). Regardless of the World Bank enterprise financing policies to eradicate the problem of access to loans, many of these enterprises in developing countries still face this challenge, because of poor coordination and the quality of existing structures in support of informal enterprises (Quainoo, 2011; World Bank, 2018).

Some of the policies are the formulation of the Credit Guarantee Scheme to help firms who are without collateral to secure loans from financial institutions (Kayanula & Quartey, 2000). Also, impositions of interest rate ceilings and direct credit policies were geared toward reducing the interest rates (Nkuah et al., 2013). But these policies usually fail because they lead to high reserve requirements and artificially low interest rates causing financial market distortion. This will cause the breakdown of formal financial institutions' ability to offer loans hence HEs will turn to informal agencies for assistance.

Moreover, policies such as the introduction of Banking Regulation (Credit Bureau) as was implemented in Kenya on 11th July 2010 to make lenders (bankers) more confident and to prevent borrowers from taking loans at multiple financial institutions have made credit risk management easier (Mole & Namusonge, 2016).

In the case of Ghana, institutions such as the Microfinance and Small Loans Centre established in 2006 are to address and standardize the approval of loans and to provide training programs and financial advisory services for small scale businesses (MASLOC, 2006).

Theoretically, lack of access to loans has been expounded through the credit rationing hypothesis put forward by Stiglitz and Weiss (1981), which postulates that the problem is the result of information asymmetry resulting in financial market distortions. Adverse selection and moral hazard problems in loan agreement are the reason for inadequacies in the financial market.

Loan acquisition is subject to information asymmetry, not only on the side of the borrower but also that of the lender. Financial institutions are unable to ascertain the faithfulness of the borrower or to keep track of the money borrowed if it was used for the intended purpose. On the flip side, lenders (HEs) are unable to signal the financial institutions that they possess the desired characteristics that improve their probability of fulfilling their loan obligations (Gariba, 2015). This leads to a failure of the financial market.

Financial institutions provide loans to HEs based on their capability to calculate the probability that they would be repaid and this is hugely dependent on the profitability of the enterprise (Stiglitz & Weiss, 1981). Furthermore, supervisory weaknesses, market failures, regulatory constraints, financial structure insufficiencies, and financial institution inadequacies determine the supply of loans to enterprises (Malhotra et al., 2007).

Nonetheless, financial institutions are able to approximate the creditworthiness of HEs and their ability to repay the loans based on information they are able to obtain from owners of the enterprises such as experience, association to business society, level of education, size of the enterprise, the value of assets and possession of financial statements (Deakins et al., 2010; Kumah, 2011; Pandula, 2011)

1.1 Problem Statement

Ghana's sustained GDP growth from 1991 to 2006 created an average of 8 percent per year of substantial self-employment and private wage employment. Notwithstanding the rapid growth in wage employment during that period, agriculture remained Ghana's leading primary employment sector, with HEs a close second (Quainoo, 2011).

Despite all the success, the problems of access to loans, lack of managerial expertise, inappropriate equipment and technology, and regulatory concerns of HEs still exist (Aryeetey et al., 1994; Gockel & Akoena, 2002; Quainoo, 2011). Concerning managerial skills, most of the entrepreneurs do not see the need for training and skill acquisition and the few who see it to be needful do not have the means and cannot afford it, in the face of the many training and advisory institutions available (Kayanula & Quartey, 2000).

However, several policy initiatives have been implemented by the government to assist HEs such as the credit guarantee scheme. The Non-Bank Financial Institutions (NBFIs) were also established to attend to the financial needs of HEs (Gockel, 2003). Also, there has been substantial backing from international donor institutions like the United Nations Industrial Development Organisation (UNIDO) and the African Business Angel Network (ABAN), which

is a Pan-African non-profit organisation founded to help the survival of infant businesses across Africa and to encourage many more investors about the prospects in Africa (Gariba, 2015). In recent times, the Business Development Minister, Mr Ibrahim Mohammed Awal, made mention of some $10 million the government has made available under the National Entrepreneurship and Innovation Plan (NEIP) and also added that this amount is not enough, therefore the government has embarked on policy to add GH20 million by March 2018 (NEIP, 2018). These funds are to support start-up businesses in both the formal and informal sector.

Access to loans from commercial banks by HEs has been a concern for entrepreneurs, policymakers and government since most financial institutions in Ghana are hesitant to grant loans to HEs because of the apparent high risk of the enterprises in this sector but are willing to expand loans to large firms (Alhassan & Sakara, 2014). Many of the HE entrepreneurs are considered not creditworthy by most of the financial institutions because they are not able to satisfy rigid banking terms and conditions such as secured collateral, unfavourable maturity period, burdensome loan repayments process and complex loan applications and disbursement procedure (Abor & Quartey, 2010). These cause most of the HEs to turn to the informal credit sector for loans. This is because most the entrepreneurs do not know the dynamics of accessing loans from both formal and informal sources. Also, the financing of HEs may vary from country to country depending on the nature and structure of the HE sector (World Bank, 2018).

Also, there are policies undertaken by governments and other NGOs to close the HEs financing gap but they cannot do it alone and the gap also keeps widening overtime (World Bank, 2018). According to the World Bank (2018) over 70% of MSMEs lack access to credit and this financial gap is particularly wide in Asia and Africa. The current financial gaps in the formal and informal enterprise sector are estimated to be $1.2 trillion and $1.4 trillion respectively (World Bank,

2018). Hence there is the need for the entrepreneurs to know the available financial assistance and understand the dynamics of access to loans.

This brings the issue of how HEs can access loans and what new strategies can be employed to finance HEs in Ghana. Also borrowing from an informal source comes at a high cost. The interests are often high whilst the loan amount may be small. Therefore, there is the need to assess both the formal and informal financial sector closely. This raises the question of not only the determinants of total loans in general but to explicitly take a keen look at the factors that determine access to loans by HEs from both formal and informal credit sectors. Finally, the financing of HEs is based on the nature of the HEs, therefore there is the need to also look at some ways of financing HEs in Ghana.

1.2 Research Questions

The study, therefore, seeks to find empirical responses to the following research questions:

1. What are the determinants of HEs' access to total loans?

2. What are the determinants of HEs' access to formal and informal loans?

3. What are the new strategies for financing HEs?

1.3 Objective of the Study

The study aims at achieving the following objectives:

1. Identify and estimate the determinants of HEs' access to total loans.

2. Estimate determinants of HEs' access to formal and informal loans.

3. Ascertain new strategies for financing HEs.

1.4 Justification and Significance of Study

This study is significant because of the contributions of HEs to the socio-economic development in developing countries particularly SSA countries. The problem of access to credit has been addressed by a lot of researchers, however, the literature on HEs financing shows that there are no or little studies on the determinants of access to loans among HEs in developing countries in Africa.

Whilst a few previous studies like Alhassan and Sakara (2014) and Gariba (2015) have examined the determinants of access to credit by SMEs in Ghana, there is no study on determinants of access to loans by HEs, with focus on formal and informal loans market. Moreover, previous studies in Kenya like Akoten et al. (2006) and Mole and Namusonge (2016) were limited to MSEs in a specific sector and also a particular region. Most of the studies in Ghana also do not distinguish between formal and informal access to finance. Also, a study on access to finance by Non-Farm Enterprises in Ghana was focused on only rural areas (Osei-Assibey, 2014). In contrast, this study focuses on the determinants of access to loans in general and also looks at the determinants of formal and informal loans explicitly.

The findings of this study can inform policymakers and government on policies that are geared toward eradicating the HEs financing impediments, particularly, in terms of access to loans. Knowing how these variables affect access to finances would be significant in prioritizing the efforts of stakeholders and government in promoting HEs' access to loans and, therefore, the financial inclusion of HEs in Ghana. Moreover, the findings of this study will serve as a benchmark and guidance for financial institutions on how to meet the financial needs of HEs in Ghana. Finally, this study will add to the existing literature on HEs' financing.

1.5 Organisation of Study

The study is made up of six chapters outlined in the following manner.

The first chapter presents the introduction of the study and a general idea of the whole study.

Chapter two presents an overview of the HE sector and the structure of the financial sector in Ghana, and the linkage between them. Chapter three presents a review of the literature on the determinants of access to loans.

The methodology adopted by the study is presented in chapter four. Also, here we discuss the sources of data, model specifications and measurement of variables. Chapter five analyses the data and discusses the empirical results.

A summary of the whole study and the recommendations for policy are provided for in Chapter six.

CHAPTER TWO

HOUSEHOLD ENTERPRISES, THE FINANCIAL SECTOR, AND INTER-LINKAGES

2.0 Introduction

This chapter is in three major sections. The first section talks about the general overview of the Household Enterprise Sector and the second also gives an overview of the structure of the Financial Sector in Ghana. The last section discusses the linkage between HEs and the financial sector.

2.1 Overview of Household Enterprise Sector

2.1.0 Introduction

This section gives an overview of the HEs sector in developing countries, with a specific focus on Ghana. It begins with a theoretical definition of HEs and an overview of the HE sector in Ghana. It also looks at the vital contributions that HEs make towards economic growth and development, particularly in developing countries such as Ghana. It further discusses the general challenges of the HEs sector, particularly lack of access to loans. Lastly, it examines the government's financial and policy supports to curtail HEs' financing constraints in Ghana.

2.1.1 Definition of Household Enterprises (HEs)

Household Enterprises have not received much consideration in the enterprise literature even though they are crucial for the development of an economy. The definition of HE remains varying or unclear (Kayanula and Quartey, 2000). It is a matter of literature. The inconsistency in the definition of HE may lead to complications in the calculation of income and assets, and also the rate of return on HE (Samphantharak & Townsend, 2012). Kayanula and Quartey (2000) stated that:

> "*There is no single, universal, or uniformly acceptable definition of enterprises*" (p.225).

Therefore, quite a lot of criteria have been employed to help define HE. A review of the literature on the definitions of HE is based on diverse criteria such as the number of workers employed (household members employed), the proportion of returns to the household, and the value of fixed assets. To classify a business as a HE, standard practice (International Labour Organisation, 2011) obliges that the following conditions have to be met:

a) The ownership condition (owned by a member of the household) and either
b) The size criteria (limit of the number of employees), and/or
c) The legal status (non-registration of the enterprise or its workers).

The last criterion (legal status) is mostly inconsistent since the rules on the registration of enterprises vary by country. The word 'registration' may also differ in meaning depending on the country. For example, in Uganda, registration means a certain level of legitimacy from the state, but this is not the case in Tanzania and Rwanda. Also, in some countries, it is legal to do business in an individual's own name even without registering. Therefore it is only the first two criteria that are mostly used by most researchers in order to maintain consistency (Fox &

Sohnesen, 2012). The World Bank in collaboration with Women in Informal Employment: Globalising and Organising (WIEGO) on a study on Policies and Programmes for Household Enterprises in Africa defined HE as:

> "*Self-employed persons together with any family members or casual workers assisting them (not involving contractual workers)*" (WIEGO, 2008, p.1).

According to the World Bank (2012), HEs are self-employed enterprises working in non-agriculture, which may employ contributing family workers. It also stated that HEs together with Micro Enterprises (MEs) form what is known as Non-farm Enterprises (NFEs).

Narrowing down to developing countries, Fox and Sohnesen (2012) examined Household Enterprises in SSA, and they sometimes used HEs and MEs interchangeably. This is because they had a lot of characteristics in common: both are independent household owned non-farm enterprises. The distinction is that HEs employ only family workers whereas MEs employ at least one non-family employee on a constant or contractual basis.

The NBS of Nigeria also defines HE as a self-employment business that employs about 5 workers (NBS, 2011). A Household Enterprise as described by Bakeine (2009):

> "*HEs consist of self-employed (or own-account) workers and unpaid family members engaged in non-farm business activities, at the lower end of what is often categorized as micro, small and medium enterprises (MSMEs)*" (p.3).

This implies that HEs represent the bottom of the pyramid of MSEs, therefore in some studies they were known as Micro Enterprises (MEs) as shown in Fig. 2.1 below.

In conclusion, there is no general consent over the definition of a HE. Since the definitions vary across countries, it is vital to look at definitions of HEs in the context of Ghana.

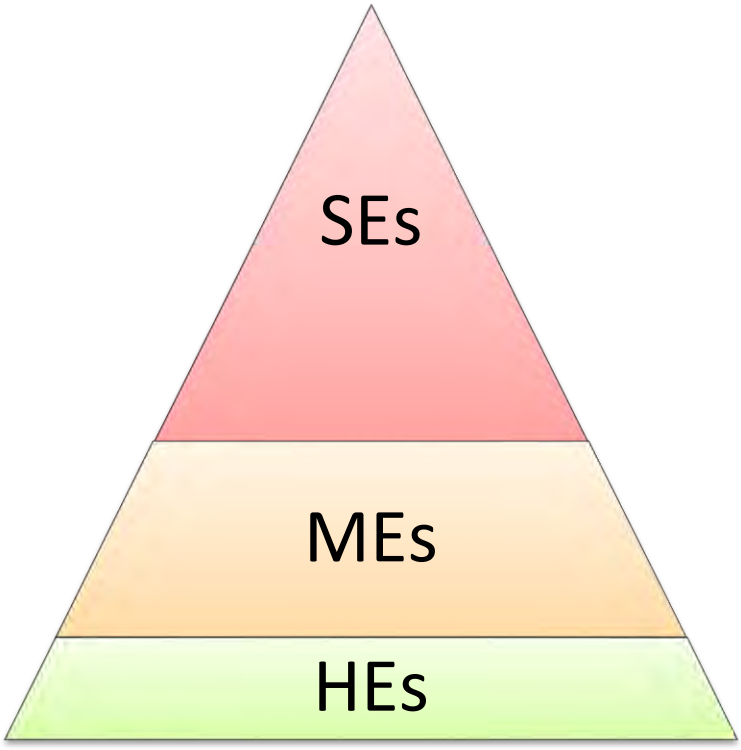


Fig 2.1: A cross-section pyramid of Micro and Small scale Enterprise (MSE)

Source: Author's compilation based on literature

2.1.2 Definition of HE in Ghana

In Ghana, the definition of HE is based on the classification of enterprises. Some studies use turnover level and skill of labour while others make use of capital asset in the categorisation of enterprises (Abor & Quartey, 2010). The classification of HE in Ghana has mainly been based on the criteria of size and ownership.

Size has been well-defined in diverse ways like annual turnover, industry of enterprise and number of workers (Weston & Copeland, 1998). But in most studies in Ghana, size has usually

been defined as the number of employees. For example, a survey report of the Regional Project on Enterprise Development Ghana categorized enterprises into:

(i) less than 5 workers – microenterprise; (ii) 5-29 workers – small enterprise; (iii) 30–99 workers – medium enterprise (iv) 100 and above – large enterprise (Abor & Quartey, 2010).

Furthermore, what explicitly defines HE from the various enterprises is ownership. According to the Ghana Statistical Service (GSS), HEs are non-farm enterprises owned by a household. It also considers the proportion of the returns of the enterprise that comes to the household (GLSS, 2014). The Living Standards Measurement Study (LSMS) by EGC-ISSER (2015) also follows the definition of GSS. In addition, a World Bank study on HEs in Ghana stated that:

> "*HEs are small businesses engaged in nonfarm activity, and are operated by a single individual (the owner) or with the assistance of family members or no more than five non-family workers on a casual basis*" (Quainoo, 2011, p.1).

Fox and Sohnesen (2012), on their examination on HEs in Ghana, defined HE as a non-farm enterprise that is owned by a household and unincorporated, with only family workers.

The above did not indicate a cut off for the number of employees but one thing is certain, the employees should be members of the household and causal workers but not permanent contractual workers.

2.1.3 General Overview of HEs in Ghana

In Ghana, 44.3 percent of households are engaged in non-farm enterprises, of which 50.4 percent are in urban communities. As stated in the GLSS report that these enterprises are classified into major groups (Manufacturing, Trading, and Other Activities) according to the United Nations Statistical Classification System called the International Standard Industrial Classification of all Economic Activities (ISIC), Revision 4 (GSS, 2014).

The common operations within this sector comprises of soap and detergents, fabrics, textile and leather, cement and bricks, village blacksmiths and tin-smithing, ceramics, beverages, food processing and bakeries, tailoring and clothing, wood furniture, electronic assembly, agro-processing, mining and timber, mechanics, chemical-based products, but does not involve farming, fishing, hunting and forestry (Kayanula & Quartey, 2000; Abor & Quartey, 2010; Quainoo, 2011).

The HEs are also classified based on the number of years they have been in operation. A study by Abor and Biekpe (2006) categorised them in this manner:

(i) Infant – less than 1 year

(ii) Young – from 1 to 5 years

(iii) Adult – from 6 to 10 years

(iv) Mature – 10 years and over

The majority of HEs in Ghana are not formally registered. Most of HEs run by females are more likely to operate from the home. The HEs owned by females are likely to be overlooked since they are home-based and do not operate directly in the traditional market. Therefore, these owners tend to be invisible entrepreneurs (Mead & Liedholm, 1998).

Household savings is the main source of capital for HEs. After household savings, is assistance from friends or relatives, and then followed by the banks (GSS, 2014). HEs are usually more labour-intensive, and more efficient in developing countries like Ghana where labour is abundant and capital is scarce. Most of these HEs operate with low technological know-how and innovation.

In addition, income generated by the financial and physical capital of HEs cannot be straightforwardly separated from that generated by the human capital of members of the household (wage earnings). Also, they are not secured by limited liability, therefore, the owners are not different entities from their enterprises. This affirms what was established by Samphantharak and Townsend (2012) that, business assets and household assets are legally inseparable, therefore they are collectively used between household and business.

Another characteristic of HEs in Ghana is that their products and services are delivered to only the local market. They lack the ability to access the international market even if they wanted to. This is mainly because of the massive capital requirement for operating in the export market, low level of education, informal nature of the business, and lack of training for entrepreneurs (Gariba, 2015).

The lack of entry barriers has created competition which has led to the closure of inefficient and poorly managed HEs, making the HEs in the trading (retail) sector face the highest closure risks. Nevertheless, because of higher capital and skill requirements in the manufacturing sector, it has made it less competitive (GSS, 2014). The HEs in services and manufacturing are more likely to grow than those in trading.

2.1.4 Contribution of HEs to Economic Growth and Development

In the early 2000s, there has been a resurgence of economic growth and development in low-income SSA countries, including Ghana. Fox and Sohnesen (2012) postulated that, between the years of 2000-2008, countries like Ghana, Rwanda, Mozambique, Uganda, and Tanzania all recorded GDP per capita growth above 3 percent per annum. This growth was partly attributed to the increase in non-farm private enterprise employment, which included owners and family members in HEs.

Household Enterprises creates most of the new jobs outside of agriculture (GSS, 2014). The movement of labour outside of the agricultural sector in the recent decade shows up as HE employment, and just a little showing up as wage employment. The principal reason for the increase in HE employment over the previous years was due to the debt crisis, during which many developing countries underwent a laying off of workers in the public sector, and the private sector was not capable of absorbing the growing labour force (Fox & Gaal, 2008). Employment in HEs of SSA countries undergoing growth and poverty reduction is the rapid growing part of such economies. These enterprises have been the key solution to diversification by transforming labour from subsistence agriculture to non-agriculture activities (World Bank, 2012). In Ghana, the GSS (2014) stated in the GLSS report that, more than six million people are engaged in non–farm enterprises, including both HEs and MEs.

Another key contribution of the HEs to both developed and developing countries is poverty alleviation and diversification of income. Although 40 percent of household rely on HEs as an income source, they (HEs) are often disregarded in low-income SSA development strategies Fox & Sohnesen, 2012). This is because the majority of the informal enterprises are often believed to be unproductive, hence described as a poverty trap (Banerjee & Duflo, 2006). Contrary to this

assertion, a study by Barrett et al. (2001) evaluated household livelihoods in rural SSA and concluded that HEs (non-farm activities) aided in the reduction of household poverty. It was also noted by Fields (2012) that, the only way for poor households in SSA to eradicate poverty is by earning more money from employment. He further argued that most non-farming employment in SSA countries like Ghana is now in HEs and has helped alleviate poverty.

In Ghana, the majority of HEs in rural areas are often seasonal ventures, since investments in the agricultural sector (farming) have not reduced risk or increased productivity enough for households to particularly specialize in one sector or the other (Fox & Sohnesen, 2012). This enables poor households to diversify their income, leading to a rise in income and making them less poor.

2.1.5 Problems Facing Household Enterprises (HEs)

This section reports on the challenges most HEs face in starting and the daily running of their businesses.

Inadequate capital and lack of finance

Inadequate capital and lack of finance are the repeatedly challenge mentioned by most HEs (GSS, 2014). It covers the several challenges confronted by HEs in their daily operations as well as the following: (i) inability to acquire a suitable worksite; (ii) difficulties in securing tools and material inputs; (iii) high cost of raw materials; (iv) inability to meet customer demands; (v) high costs of utilities and fuel.

The challenge of lack of finance includes a circumstance where HEs experience hitches in starting and in running the affairs of the business due to delays or failure to obtain loans. Many HEs try but fail to obtain loans from formal financial institutions. Even those granted the loans, encountered a lot of complexities in the process. A World Bank study showed that 71 percent of the urban HEs and 65 percent of the rural HEs reported difficulties in accessing loans. In all, 68 percent of all entrepreneurs surveyed claimed to be experiencing difficulties in acquiring finance for their businesses (Bakeine, 2009).

The main difficulties faced in their effort to access loans include finding acceptable collateral; the interest rate is too high; the maximum loan size allowed for micro businesses being too small; the loan process is too long and tedious to deliver the required funds at the time needed; and the repayment terms being unfavourable (Stephanou & Rodriguez, 2008; Bakeine, 2009; Alhassan & Sakara, 2014).

Resulting from the inability to raise finance, numerous HEs survive on a very insignificant capital base and ultimately collapse. Because of this, many HEs resort to the informal sector, including borrowing from friends and relatives to accumulate some capital (Nkuah et al., 2013; GSS, 2014). In several cases these alternatives fail to deliver, and should they even deliver, they only make available just a fraction of what the enterprise actually needs.

Poor Infrastructure

The problem of poor infrastructure entails HEs experiencing poor road network and power supply problem. The problem of access, reliability, and cost of electricity (power) in Ghana is a critical challenge particularly among HEs in the manufacturing, services, and trade (retail) sectors. Whereas rural based HEs are almost always affected by inaccessibility to electricity,

urban HEs may have access to electricity but are affected by the unreliable nature of the supply and high cost of electricity (Bakeine, 2009). The direct consequences of this problem on HEs' operations are lost employment and a decline in income. The common remedy most of the HEs resort to is buying generators to operate their business. This often is out of their reach since the cost of buying and maintaining a generator is expensive and therefore most the enterprises' production reduces drastically.

Lack of a Proper Worksite

Lack of a proper worksite, in this case, comprises of lack of a work place; unsuitable work place; and lack of storage space. Unsuitable work place includes worksites without a shelter and opened to hash weather (hot sun and rain), and worksites considered as unsafe and insecure. This is a general challenge among entrepreneurs in quest of starting a business. However, after discovering a place and starting operations, HEs sooner or later are faced with a similar problem when rent increases or they need relocation to bigger sites to accommodate the expansion. Bakeine (2009) argues that the majority of HE entrepreneurs do have premises to operate in, but their key setback is the high cost of rent. With increasing costs in most SSA economies, landlords periodically increase rent, and many of the HEs cannot pay such rapidly increasing rent.

Lack of Business Knowhow

The lack of business knowhow unfolds in two main branches. These are: (a) finding buyers; (b) problem of bad debts (Bakeine, 2009). Lack of buyers is one of the main challenges of HEs on the lookout to sell their goods and services. The concerns, in this case, are insufficient buyers, high level of competition for the limited buyers available, and target market contains only low-

income earners. This problem would have been avoided if HEs could undergo a basic study of their target market to know the gap available, level of competition, and location of buyers. Many of the entrepreneurs, for lack of advice and training, do not see the need to engage in a study of the market before commencing operations (Kayanula & Quartey, 2000).

Bad debts arise out of regular business transactions with customers, who are short of the cash. This problem seems to be common with new-entrant enterprises, which are inexperienced to deal with this issue of credit purchases. Usually, customers negotiate for credit and promise to pay back later. They (customers) end up taking too long to pay or not paying. This leaves the HE without the goods and cash as well (Bakeine, 2009).

Lack of access to Appropriate Technology

This is a challenge faced by HEs that are unable to upgrade their technology due to, lack of finance and unavailability of the desired technology. One may think that this is only a problem to the rural-based HEs but it hurts the urban ones as well. For example, a study by Bakeine (2009) revealed that 66 percent and 67 percent of HEs in urban and rural localities respectively lack access to appropriate technology.

Although all enterprises face the above challenges, HEs are usually ignored and more attention is given to larger enterprises. According to Kayanula and Quartey (2000), larger enterprises already receive massive support through finance, direct subsidies, tax policy, and general trade and HEs tend to be more constrained. This was also affirmed by Fox and Sohnesen (2012) concerning HEs in low-income SSA countries.

2.1.6 Policies, Institutional and Support Environment for HEs

Household Enterprise improvement campaign in Ghana was not a major priority of the government during the 1960s and 1970s. This is because, during the first republic era (1960-1966), the president (Dr. Kwame Nkrumah) emphasized on policies in the direction of industrialisation and modernisation at the state level, but did not support the micro domestic indigenous sector. The economic crunch (high inflation) that hit Ghana in the early 1980s pushed numerous employees in the formal sector into alternative self-employment in order to make a decent income (Kayanula & Quartey, 2000). Self-employment and small scale enterprise employment recorded 2.9 percent growth per annum; this was more than that of employment growth in large firms (Steel and Webster, 1991).

The government now got interested in the expansion of the small business sector. The National Board for Small Scale Industries (NBSSI) was also established in 1985, to cater for the needs of small businesses; this was through training programs such as the Entrepreneurial Development Programme, which is aimed at training and assisting individuals with potential entrepreneurial capabilities into self-employment (Kayanula & Quartey, 2000).

A Mutual Credit Guarantee Scheme was established for entrepreneurs, who for the reason of no collateral could not access bank loans, to access loans. Also, a Rural Finance Project was established to provide long-term loans for craftsmen and small-scale farmers (Kayanula & Quartey, 2000). The National Vocational and Training Institute (NVTI) was also founded by the government to train and enhance the skills of elementary and secondary school leavers, and such other persons through master craftsmanship, apprenticeship and career development (NVTI, 2009).

The World Bank in collaboration with the Programme of Action to Mitigate the Social Costs of Adjustment (PAMSCAD) made special funds available to support microenterprises in accumulating finances. This was founded on the belief that, the main reason why the private sector had not grown as it should was because of unavailability of loans from the formal financial institution (Abor & Biekpe, 2006).

In recent times, the National Committee on the Informal Economy (NCIE) support HEs through the Business Advisory Centres (BACs) and the local authorities such as Metropolitan, Municipal and District Assemblies (MMDAs). The BACs main responsibilities are, to support them in the form of training and counseling in areas like record-keeping, preparation for the NVTI professional tests, visiting other HEs to learn from them and also to encourage HEs to form their own associations (Quainoo, 2011).

The MMDAs are responsible for zoning and giving HEs a workplace in places like the local market area and they also undertake local training with the aim to build the capacity of HE operators. Some of such training programs are; handicrafts making, shea butter extraction, livestock rearing, soap making, among others (Quainoo, 2011).

The challenge encountered with the implementation of these policies is that they require complex legal processes to be eligible for the package they come with. Also, many of the loan schemes are mostly centralised in the capital cities like Accra and Kumasi, making it difficult for rural-based HEs to access (Baah-Nuakoh, 2003).

2.2 Overview of the Financial Sector in Ghana

2.2.0 Introduction

This section discusses the structure of the financial sector in Ghana. The subsections discuss the nature of the financial sector in Ghana, the classification of financial sectors and the various players in these financial sectors.

2.2.1 The Structure of the Financial Sector in Ghana

In Ghana, the financial sector is divided into three subsectors, which comprises of the formal, semi-formal and informal. According to Osei-Assibey (2011), each of these sectors has different banking and legal regulations controlling their operations. However, only the formal and the informal sectors are the most discussed of the financial sectors in Ghana (Aryeetey & Gockel, 1991; Aryeetey, 1992; Munira 2013) and this due to the fact that they differ in operations, service delivery and have different target population (Aryeetey, 2008).

The formal sector comprises of institutions that are certified by the Bank of Ghana under the Banking Law (Act 930) and they operate under the regulations of Bank of Ghana (BOG, 2016). The Semi-formal sector encompasses all financial institutions that are registered formally but are not certified by the Bank of Ghana (Steel & Andah, 2003; BOG, 2016). They do not operate under the regulations of the Bank of Ghana. They are usually classified between the formal and informal financial markets and consist of savings and loans companies, credit unions, government credit schemes, and non-governmental credit schemes.

Also, the informal financial sector comprises of savings and lending operations or transactions that take place outside of the established formal institutions (BOG, 2016). Their activities include all transactions taking place beyond the scope of banking regulations.

The formal financial sector in Ghana is not able to satisfy the growing financial needs of demand for loans, hence many of the borrowers opt for an informal loan source (Owusu-Antwi & Antwi, 2010). Consequently, it is argued that the integration between the formal and informal financial sectors can better the efficacy of the financial institutions by enabling the various agents within the financial sectors to specialize in different roles, and this will further enhance the flow of credit in the financial sector in Ghana (Aryeetey, 2008).

Below is a summary of the structure of Ghana's financial sector:

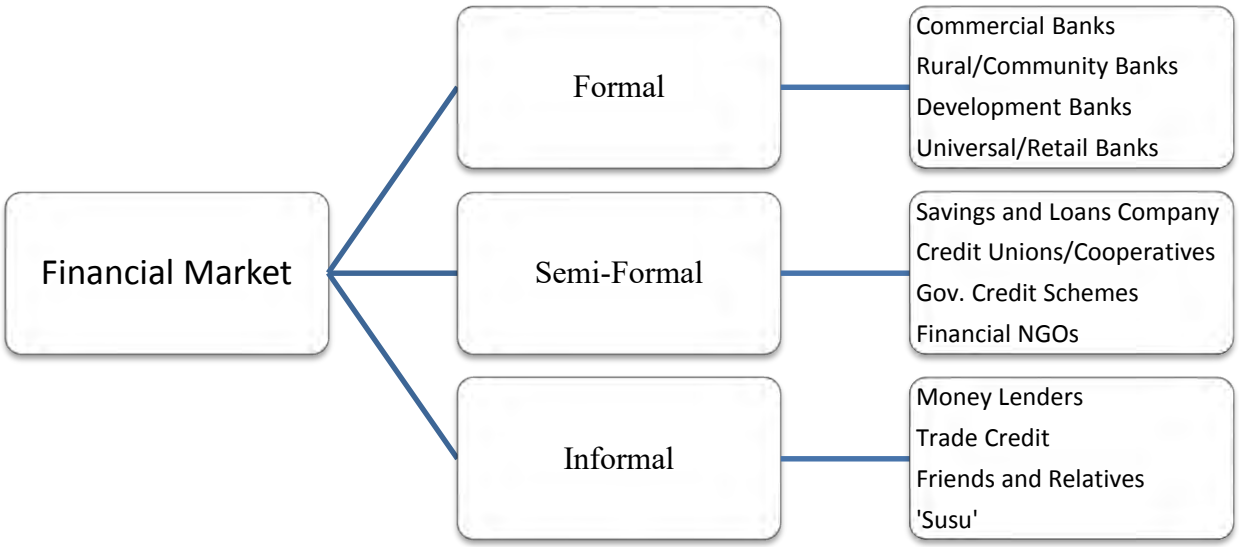


Fig 2.2: Structure of the Financial Market in Ghana

Source: Osei-Assibey (2011)

2.2.2 The Formal Financial System

The formal financial system has gone through diverse legislative transformations in terms of policies since the establishment of the British Bank of West Africa (BBWA) in 1897 (Gockel & Akoena, 2002). The transformations were needful due to the evolving economic environment and the varying financial needs of the people. For example, the government established the National Investment Bank (NIB) in 1963 and the Agricultural Development Bank (ADB) in 1965, with the motive of driving development through the banking system (Bawumia, 2010). The main aim of NIB was to aid development in the industrial sector by providing credit for agro-based and manufacturing industries, whereas the ADB aimed at assisting the development in the agricultural sector as the agricultural credit and cooperative bank. The Bank for Housing and Construction was also formed in 1974 to meet the financial needs of private housing projects, expansion and reconstruction of property estates and also industrial building projects (Gockel & Akoena, 2002). In addition, Munira (2013) stated that, with support from the World Bank and International Monetary Fund (IMF), the Financial Sector Adjustment Programme (FINSAP) was initiated in 1988 as a strategy to move the Ghanaian formal financial sector from an era of financial repression towards one of financial liberalization.

This led to the elimination of credit controls, direct credits and interest rate ceilings, development of the money and capital market, restructuring of some poor performing banks, and the move towards market determined monetary policy instruments.

Presently, the institutional framework of Ghana's formal financial sector consists of Bank of Ghana, ARB Apex Bank (which is the Central Bank for Rural and Community Banks), General Banks, Class 1 Banks and Non-Bank Financial Institutions (Munira, 2013). According to the

Bank of Ghana, as at 30th August 2017, there were 35 banks with over 900 branches all over the country (BOG, 2017).

The formal banks are mostly characterized by high value and long-term loans which entail formal application, complex paperwork, and collateral. As a result of these, they usually deal with fairly large business entities since they believe that it is easier, less risky and more lucrative (Aryeetey, 2008). It has been established that most of the formal institutions are reluctant in extending loans to small enterprises (Alhassan & Sakara, 2014). In spite of this, most of the banks have improved their efforts to reduce this problem by reaching out to new and huge markets of the unbanked. Nevertheless, their efforts have been overly concentrated in the urban area, hence neglecting the rural communities (Osei-Assibey, 2009).

2.2.2.1 Rural and Community Banks (RCBs)

In 1976, the Ghanaian government in collaboration with the nation's central bank (Bank of Ghana), established Rural Banks to promote rural development by providing credit to industrious rural ventures (Obeng, 2008). The RCBs are owned by the community members through equity and are certified to be responsible for financial intermediation in the rural areas. They operate with the motive of accumulating savings and providing credit facilities that are not met by the commercial banks (Munira, 2013).

The RCBs expanded over the decade after its formation. Nonetheless, due to weak supervision and poor financial management, the sustainability of the rural banks was deteriorated (Steel & Andah, 2003). To fortify and promote the rural banking concept, a non-governmental organization called the Association of Rural Banks (ARB) was established in 1981. The spread

of ARB all over the nation coupled with an effective monitoring of them led to the formation of the ARB Apex Bank in 2001. The ARB Apex Bank serves as the headquarters of the rural banks and performs functions like treasury management, check clearing, training programmes and product development. The RCBs stimulate the banking behaviour among rural inhabitants, to assemble resources into the banking system to enhance development and credit availability to productive ventures which include both farming and non-farming activities. The Bank of Ghana reports a total of 140 RCBs all over the regions of Ghana (BOG, 2016).

2.2.3 Semi-Formal Financial System

The Semi-formal financial sector comprises of all formal registered financial institutions that are not licensed by the Bank of Ghana. They include Savings and Loans Companies, Government Credit Schemes, Credit Unions and Non-Governmental Organizations (NGOs) (Osei-Assibey, 2011). Under the Companies Code, an NGO is a company limited by guarantee with the purpose of not making profit (Munira, 2013). They usually focus on poor clients by use of microfinance strategies. Since they are certified to take deposits from the general public, they rather use external funds (such as donations) for micro credit.

According to Aryeetey and Gockel (1991), credit unions were first introduced in Ghana in 1955, by the Roman Catholic fathers located at Jirapa in the Upper West region. Munira (2013) described Credit Unions as cooperative thrift societies which are established in both rural and urban communities and workplace. Their aim is to encourage savings among members (traders, farmers, and non-agricultural workers) for efficient ventures in order to better their socio-economic lives (Munira, 2013). Although their focus is to provide intermediation (savings and

loans services) to members only, some of them are looking to extend their scope of service to the entire community (Andah, 2005). Quainoo (1997) stipulated that Credit Unions were integrated under the legislation in 1968, with 254 Credit Unions with over 60,000 members. This resulted in the formation of the Credit Union Association, which was meant to be an apex body of all the unions. Members of the union make periodic deposits and may borrow up to twice their savings. The only requirement for borrowing from CUs is that the member must show a good standing of his or her deposit, in addition to a guarantee from another member who has not faulted his or her periodic deposits (Steel & Andah, 2003). CUs often have weak financial performance due to the fact that they focus on the welfare of members, specifically with policies such as no interest on loans.

Saving and Loans Companies (SLCs) emerged in the 1980s to provide their target market the financial needs they were lacking in one way or the other. They function under the Non-Banking Financial Institution law 2016 (Act 931) (BOG, 2016). Though they are not certified by the Bank of Ghana, the Bank of Ghana issued a regulation to enhance screening and monitoring of their operations (Munira, 2013).

2.2.4 Informal Financial System

Informal financial sector encompasses the activities of less formalized financial actors like money lenders, susu collectors, landlords, rotating savings and credit associations, traders and relatives and friends (Aryeetey, 2008). The activities of these actors differ somewhat from each other in terms of interest rates, loan amount and loan duration, and this makes it difficult to describe the structure for demand for loans in this sector (Aryeetey & Gockel, 1991). However,

often times most researchers do not take these differences into significant consideration and hence they categorize all these actors into a single sector (Awunyo-Vitor & Abankwah, 2012).

The informal financial sector is said to have come into existence due to the inadequacy of the formal financial sector, hence most analysts believe that a reformation of the formal financial sector may lead to decline or failure of informal finance (Aryeetey, 2008). But in spite of all the financial reforms, the informal financial system has shown a consistent growth and has adapted to the fluctuations in the Ghanaian economy. This is because the development of the formal sector serves as a driver of the dynamism for the informal sector (Aryeetey & Gockel, 1991). This sector is of great importance to capital accumulation in Ghana because it contributes about 45 percent of private sector savings (Munira, 2013). The informal sector is mainly characterized by flexibility in interest rate, easy access and loan flexibility, minimal collateral requirements and rapid loan processing (Munira, 2013). According to Owusu-Antwi and Antwi (2010), the credit transaction in this sector can be classified into commercial and non-commercial. Commercial credit transactions are conducted by estates owners, traders, landlords, susu collectors, and moneylenders, whereas the non-commercial ones occur between relative and friends.

Susu collectors are finance operators who supply households with short-term loans and flexible financial needs. Since they are not subject to any regulations, it makes saving with them riskier (Munira, 2013). Their style of operation is in this manner, the susu collector has to visit the client every day to collect a fixed amount for a period of 31 days. The susu collector deducts a day's contribution as charges per month for his services and records the rest as saving for the client of which he or she can withdraw any time of his or her choice (Owusu-Antwi & Antwi, 2010). The susu collector then invests the savings collected into short-term projects in order to earn interest

and also grants credits to his clients at an interest rate without collateral and the loaned amount is disbursed immediately.

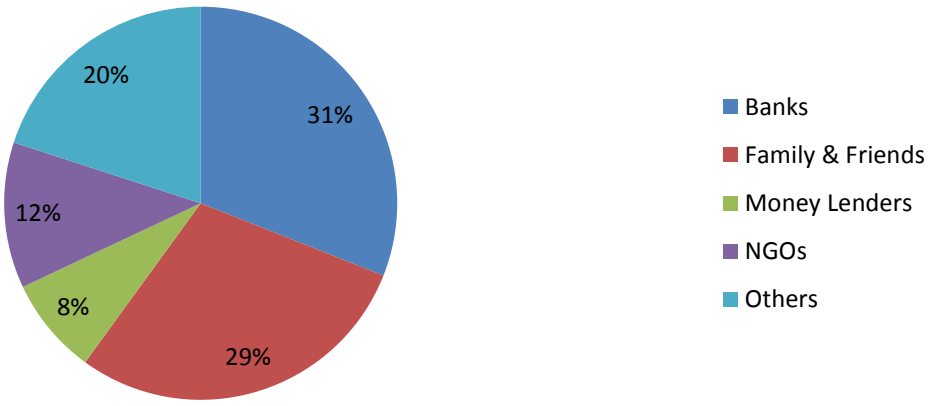
Moneylenders are key players in the informal financial system. They are often known as commercial lenders because they usually lend from their surplus income from trading or farming. Loans from this source are noted to have high interest and hence they are often the last resort for borrowers. Moneylenders are noted to give out loans at higher interest rates than banks because they usually do not require collateral and loan is disbursed immediately. Munira (2013) documented that, the demand for loans from this source is price inelastic because these loans are required during emergencies, forcing the borrower to be an interest rate taker. Moneylenders are classified into two major groups. There are those who are licensed to function under the Ordinance of Moneylenders of 1951 and those who operate unofficially (Aryeetey & Gockel, 1991). The amount lent out to a client may depend on the borrower's capacity to repay and the lender-borrower relationship.

Relatives and friends, traders and landlords play an important part as credit providers in the informal financial sector in Ghana. Relatives and friends are said to be the most common credit providers in the informal financial system since they are ease to access and loans usually come at no interest (Munira, 2013). Traders and landlords are also noted to give out credit usually not in money form but in what they trade in such as farm produce, housing, and lands.

2.3 Inter-Linkage between HEs and the Financial Sector

Recent studies like Amissah and Gyeke-Dako (2016) have shown that the financial sector has a significant impact on the private sector of which the informal enterprise sector is of no exception. The financial sector provides informal enterprises with financial services such as long and short term loans, overdrafts, among others. HEs are faced with the option of going to the two main branches of the Ghanaian financial sectors; formal and informal sectors. Each of these sectors is characterised by different features which affect a HE's choice of where to seek for financial aid. The informal sector often requires little or no information or condition when it comes to loan acquisition. However, loans from such sources are limited and often come at high interest rates (Aryeetey, 1992; Amissah & Gyeke-Dako, 2016). On the other hand, there is no financial constrain when it comes to the formal financial sector. But such loans always come with complex paperwork and collateral requirements making it difficult for HEs to acquire loans from such sources.

Fig 2.3: A Pie Chart showing the Source of Credit for Non-Farm Enterprises



***Source**: GSS(2014)*

According to the GSS (2014), among the Non-Farm Enterprises that applied for credit, 31% of them had access to bank loans. In the informal financial sector, we see that loans from family and friends were the highest (29%) and those from Money Lenders were the least (8%). This is because loans from money lenders come at a high-interest rate and it is usually the last resort for most entrepreneurs. The pie chart shows that most of the HEs have access to informal loans and are more active in the informal financial sector. From fig 2.3, we see that the formal financial sector show 30% of access to loans whilst the informal sector show 70%.

A study by De la Torre et al. (2010) indicated that most of the micro and small enterprises opting for the informal source of finance does not necessarily enhance greater output and revenue. They argued that it is common sense to find most of the small enterprises being financed by informal loans, but in the end, most of them fail and collapse in no time. Aryeetey (1998) also argued that informal institutions are unstable, collapse overtime and their delivery of credit is not appropriately done. In addition, Amissah and Gyeke-Dako (2016) stipulated that formal financing of small enterprises are better than informal financing. They found that in Ghana, there is a positive significant relationship between formal financing and enterprise performance and also added that, although formal financing has a higher impact on the performance of large firms it also has a high significant impact on MEs and HEs performance as well. This is because the formal institutions closely monitor the performance of the small enterprises to prevent defaulting of the loans. But this does not mean that informal financing and self-financing is not important.

The decision as to which sector to apply for a loan goes beyond only growth and expansion of the enterprise. It also involves proximity to which of the financial sectors; the urgency of the demand for the loan; and also the requirements the lenders may demand. Aryeetey (1992) stated that informal loans are often demanded after the rejection of bank credit application and this is

because bank credit is cheaper than informal loans (except for loans from friends). Although the financial market in Ghana is differentiated, the demand for loans is not exclusive of each sector. In applying for loans from the formal and informal financial sector, sometimes these applications serve as a substitute for one another, but other times they serve as complements (Munira, 2013).

CHAPTER THREE

LITERATURE REVIEW

3.0 Introduction

This chapter reviews comprehensively both the theoretical and empirical literature on the determinant of access to loans, with a particular focus on Ghana. It is divided into three main parts. It starts by defining access to loans and the concept of access to loans, which is followed by the theoretical review and concludes with the empirical review. The empirical review is presented thematically and focuses on the determinants of access to formal and informal loans.

3.1.0 Definition of Access to Loans

There seems to be no universal definition of access to loans due to the fact that the concept of access to loans is multifaceted. However, there have been many studies such as Salahuddin (2006) and, Claessens and Tzioumis (2006) that have tried to define access to finance. The World Bank (2008) defined access to finance as the absence of barriers in the use of financial services. Gariba (2015) also defined it as the availability of supply of quality financial services at reasonable costs. Claessens (2005) stipulated that the definition of access to finance is based on three main factors: (i) financial service availability; (ii) the cost of the credit availability (both explicit and opportunity costs); (iii) quality and type of the credit available.

According to Salahuddin (2006), loan accessibility is the ease or difficulty of securing a loan from lenders to boost the performance of the business. Loan accessibility is incited by so many factors from the side of both the borrowers (demand-side) and lenders (supply-side). Ganbold

(2008) concurs by also stating that although access to credit involves the supply of financial services, their (financial services) usage is determined by demand and supply.

3.1.1 Concept of Access to Loans

Based on the definition of credit accessibility by Salahuddin (2006) as the ease or difficulty to secure a loan, the concept of access to loans is divided into two main aspects. These aspects are the demand for loans and the granting of loans.

Demand for Loans

The concept of demand for loans is based on consumption and investment theories (Munira, 2013). This is because demand for loans is perceived as an individual's desire to supplement consumption or to invest through the acquisition of the loans (Briggeman et al., 2007). Many researchers have defined the demand for loans differently. Some studies (Chen & Chivakul, 2008; Awunyo-Vitor & Abankwah, 2012) define it as the participation in borrowing, where the individual is considered to demand loan if he applies for the loan and otherwise if he does not apply. They further stated that the participation in borrowing is influenced by some demand factors (individual's demand for loans) and supply factors (the loans market). Resulting, Munira (2013) stipulated that, there could be a possibility that supply factors (lenders) can deter some individuals from participating in borrowing even though they may put up an application for loans. This is because lenders undertake a screening of all the applicants based on observable features so that they can minimize default risk.

To correct the problem above, some researches (Mpuga, 2008; Balagon & Yusif, 2011) redefined demand for loans to mean putting forward an application for a loan regardless you receive it or

not. In this case, an individual is classified to demand loan if he applies for it and otherwise if he does not apply, making a demand for a loan a function of the application for a loan (demand factors).

However, there can be a situation where the individual many need a loan but willingly exclude himself/herself from applying because he/she is discouraged by reasons such as terms and conditions and fear of rejection of the application. As a result, Malapit (2012) hypothesized the demand for loans as a multi-dimensional decision procedure. He stated that if an individual is discouraged for fear of rejection, though he may have a positive demand for loan, he may not apply. Malapit (2012) concluded that an individual is classified as demanding loan if he/she applied for a loan or did not apply for fear of rejection of loan application although he/she needs a loan. On the other hand, an individual is not demanding a loan if he/she did not apply because he truly does not need a loan.

Granting of Loans

The granting of loans is based on the lender's discretion based on the signals sent by the borrower. This aspect only comes to play if an individual first applies for a loan (demands a loan). According to Munira (2013), the lender has to screen all applications and make sure that the loans are given out to creditworthy applicants in order to reduce defaulters. After the screening process, the applicant may be granted the full amount, part of the loan amount or denied the loan. The case where the loan is partially or totally denied denotes credit constraint (Zeller, 1994).

3.2.0 Theoretical Review on The Five C's of Credit

The five C's of credit is a mechanism adopted by lenders to measure the creditworthiness of prospective borrowers. The mechanism weighs five major features of the borrower and loan conditions, attempting to predict the probability of default. The method incorporates both quantitative and qualitative measures. The lender analyses the borrower's income statements, credit score, credit reports and other documents significant to the borrower's financial standing. The five C's of credit are character, capacity, conditions, capital, and collateral.

Character

Character is the personal impression the potential borrower makes on the lender. This is usually called credit history since it constitutes borrower's track record of loan repayment. This information is documented as a credit report. A credit report contains information about loans taken by the borrower in the past and whether he/she was able to repay the loans on time. In addition, it contains detailed information on accounts, bankruptcies, length of bank relationship and reputation of the borrower within his/her current industry. The factors that influence character can be grouped into personal, social and economic (Kimondo, 2013).

Capacity

Capacity is the capability to repay a loan based on the borrower's earnings or business cash flow. The lender uses this tool to analyse the business plan of the borrower in order to estimate the strength and viability of the business. If the loan is for an existing business, the lender looks at the history of the business cash flow and profitability in order to determine if the borrower has the capacity to pay back the loan. For a new business, the lender looks at the projected financial statement and compared it with similar firms in the industry. Also if the loan is taken for

personal use other than business, the lender looks at the job stability and the loan-to-income ratio of the borrower.

Conditions

Conditions are the general financial conditions that exist during the time of the loan. According to Kimondo (2013), the condition is the sensitivity of the borrower to external forces like inflation, interest rates, business cycles, and competitive pressure. These are conditions that borrower does not have direct control over hence makes him vulnerable. The lender considers critically what are the current environmental, technological, social, and political issues affecting the borrower. The lender obtains such information from government and regulatory bodies, and industry associations and also by undertaking marketing research.

Capital

Capital refers to the risk the borrower is willing to take with regard the loan. Capital is the general financial position of the borrower, and it includes his/her personal or tangible net worth of the business. It enables the lender to know how much the borrower has invested in the business and what he will lose should the business collapse. A large capital investment by the borrower reduces the level of default.

Collateral

Collateral is an asset the borrower pledges against his loan (Kimondo, 2013). It represents the security for which the loan is granted. Collateral is usually in the form of assets like inventory, equipment, account receivable and real estate. It provides the lender the guarantee to possess the

collateral should the borrower default on the loan. The collateral should be of equal or greater value than the loan value.

3.2.1 Theoretical Review on Stiglitz and Weiss' (1981) Credit Rationing Theory

The Credit Rationing Theory by Stiglitz and Weiss seeks to explain the lack of access to credit among micro and small enterprises. Credit Rationing is a situation where some of the loan applicants are granted the loan while others are rejected although they have similar characteristics and are willing to satisfy all the loan terms and conditions. They also indicated that some of the applicants are rejected because of credit constraint (limited supply of credit). The main cause of credit rationing is an imperfection in the financial market. Stiglitz and Weiss (1981) stated that the major characteristic of the loan market is credit rationing and this is due to imperfect information (information asymmetry) in the loan market.

The information asymmetry manifests itself in moral hazard and adverse selection. Moral hazard in the sense that, some of the actions of borrowers after they have been granted the loan are not in line with the terms and conditions of the loan hence may lead to default. The problem most lenders face is that the borrowers often do not use the loan for the purpose for which they applied, and they tend to invest the loan in low profitability projects and hence reduces their capacity to pay back the loan (Gariba, 2015). Adverse selection is concerned with how the lender tries to sort out good borrowers from the lot, based on the insufficient information the lender may have gathered about the borrowers, in order to reduce default risk. The lenders use instruments such as interest rate to distinguish between good borrowers from the bad. Stiglitz

and Weiss (1981) stated that borrowers willing to take a loan at a very high interest tend to be bad ones if they are characterized by low loan repayment ability.

The credit rationing theory is founded on the assumptions that, there exist many lenders and borrowers in the financial market; both seek to maximise their profits and are risk neutral. Lenders maximize their profit through interest on the loan and the collateral they claim should the borrower default. Borrowers also invest in profit-maximizing projects in order to increase their probability of loan repayment. It is also based on the assumption that, the exact probability of loan repayment of borrowers is known to both lenders and borrowers. But this assumption was criticized by Wolfson (1996). Wolfson (1996) argued that there is no empirical evidence to support the assumption made by Stiglitz and Weiss (1981) since there exist uncertainties in the credit market. As a result, Wolfson (1996) stated that most the projects borrowers may want to invest in are risky hence the need for credit rationing by lenders.

3.3 Empirical Literature on Determinants of Access to Loans

According to Pandula (2011), many studies done on determinants of access to credit usually concluded on two major reasons for lack of access to small enterprises: (i) the market failure of the supply-side due to rejection of loan applications from the lenders because of high risk or lack of viable business proposal; (ii) the market failure from the demand-side due to high cost associated with the credit.

Based on discoveries from numerous empirical findings, Opoku–Mensah, and Agbekpornu (2015) concluded that the factors (both demand factors and supply factors) that influence credit access by enterprises are categorised in four main classes namely; socio-economic characteristics

of the owner, managerial qualities, firm attributes and institutional characteristics. Garabi (2015) also limited his study to the demand side only and categorised the factors into owner's characteristics and firm characteristics. This was also in line with a study by Osei-Assibey (2014). This study will follow the thematic approach of empirical literature review used by some studies like Osei-Assibey (2014).

3.3.1 Entrepreneur's Characteristics that Determine Access to Loans

The characteristics of the entrepreneur are key factors that are considered during HEs' loan application screening by the lenders to predict the credit-worthiness and loan repayment ability of the entrepreneur (Osei-Assibey, 2014). This is based on the impact of human capital on the success of the enterprise, and therefore, the ability to repay the loans. Some examples of the entrepreneur's socio-economic characteristics are gender, age, experience and level of education are significant factors that determine access to credit.

Gender

A study in the U.S. on the gender differences in the ownership of private enterprises and accessibility to credit estimated that, enterprises owned by females are likely to be credit constrained than the male-owned enterprises; this is because the females are more likely not to apply for the loan for fear of rejection (Cole & Mehran, 2009). Conversely, it was observed that in SSA, female entrepreneurs are more likely to be granted credit than male entrepreneurs (Beck & Cull, 2014). Moreover, studies (Kumah, 2011; Osei-Assibey, 2014) in Ghana on access to credit, depicts no significant gender difference because the lending institutions give no preferential treatment to any gender in their supply of credit to enterprises. A study in the Upper

West Region of Ghana by Akudugu (2012) revealed that female farmers are more likely to access credit from rural banks than male farmers. He explained that most of the credit scheme packages structured by NGOs and banks focus more on empowering women by reducing their level of financial constrain. On the other hand, Awunyo-Vitor and Abankwah (2012) also indicated that men are more likely to access formal credit than females. His reason being, women do not often possess huge asset to use as collateral for formal loans, therefore they end up being rejected.

Age

Age of the entrepreneur has also been stated by some empirical studies (Magri, 2002; Chen & Chivakul, 2008) as a significant determinant of access to credit. Chen and Chivakul (2008) found a positive quadratic relationship (presented as age square) between age and the probability of access to credit. They explained this quadratic relationship to mean that young people prefer to borrow as they increase in age until they hit a particular age threshold, then this probability begins to decreases as they keep increasing in an age beyond the threshold. They argued that the expectation for income and the marginal utility of consumption for young people is very high and these increase their demand for credit and also they have a high loan repayment probability. But after they pass the prime of their lives, their demand for credit declines and their loan repayment probability is low because they embark on less economic activities. Also, Mohamed (2003) in his study found that there exists a significant negative relationship between the age of a farmer and his probability of access to formal credit. He explained his findings by saying that young people are risk loving whereas the older people are risk-averse. In addition, Zeller (1994) stated that the likelihood of accessing informal credit increases with respect to the age of the individual but a very low rate.

Household Size

Empirical studies have identified household size as an important determinant of access to credit. A study by Messah and Wangai (2011) revealed that entrepreneurs with smaller household size are more likely to borrow from formal credit providers compared to those with larger household size. They argued that smaller households have a low marginal propensity to consume and high marginal propensity to save hence higher loan repayment ability, and the opposite is true for larger households. Therefore larger households are less likely to access credit from formal sources. Zapata (2006) estimated the size of the household has a significant positive effect entrepreneur's ability to access credit from an informal source. He argued out his findings by saying that a larger household have a high level of dependency and consumption, and based on that most such households may not use the loan for the purpose they took it but rather for consumption purpose and this leads to defaulting hence they cannot borrow from formal sources where collateral is required. Resulting in most of the larger households resorting to informal source for credit where no collateral is required.

Entrepreneurial Experience and Skills

Empirical studies by Deakins et al. (2010) showed that inexperienced entrepreneurs are usually credit constrained for reason like limited security, limited trading or operating records, lack of personal resources and unpredictability of their credibility. It is also indicated that entrepreneurial experience and competence signal to the lenders high quality of human capital in the enterprise and also enhances the negotiation skills of the entrepreneur with the lenders (Ahmed & Hamid, 2011). Also, Zarook et al. (2013) found in their study that there a positive

relationship between an entrepreneur's experience and their access to credit. This factor is usually measured by how long the entrepreneur has been operating the business.

Entrepreneur's Level of Education

The entrepreneur's education level increases the probability of the enterprise receiving a loan. It is believed that lenders have confidence in managers with higher educational qualifications than the ones with lower qualification because higher qualification managers tend to be more efficient in their work (Gariba, 2015). Entrepreneur's education level is a measure of managerial ability and efficiency and hence has the ability to attract loans. Educated entrepreneurs are able to read, write, understand and analyse the loan terms and conditions, and also present the necessary paperwork for the loan acquisition. They also end up building a closer relationship with their bankers (Pandula, 2011). Ahmed and Hamid (2011) in their study found that, the entrepreneur's level of education has a positive significant relationship with the probability of access to credit. The reason is firms with graduate managers have a greater probability of access to credit as compared to firms with non-graduate managers.

Awunyo-Vitor and Abankwah (2012) estimated a positive relationship between the borrower's number of years spent in formal education and their probability of accessing loans from formal credit providers. He argued that the well-educated can read, understand and follow through all the loan application procedures. Also, formal lenders do believe that well-educated entrepreneurs are characterized by effective work ethics which transforms into higher productivity and therefore they (lenders) give them access to loans. Zapata (2006) also estimated that education has a negative significant association with the likelihood of demanding loan from an informal source. He argued that the more years an entrepreneur spends in school, the less his/her

probability of borrowing from an informal lender. This is because an educated entrepreneur understands the terms and conditions of formal loans hence they opt for formal loans over the unstructured informal loans system.

The entrepreneur's level of education is usually measured by the number of years he/she spent in formal education. It is usually categorised into no education, basic education, secondary education, vocational training, and tertiary education. However, in Ghana and most developing countries, the owners of HEs are in the category of no education or basic education because most of them learn their trade or craft through apprenticeship (Aryeetey et al., 1994).

Entrepreneur's Affiliation with Business Association

Gariba (2015) defined an entrepreneur's affiliation as the act of belonging to and participating in any social or business group with similar characteristics and financing needs. Numerous studies (Pandula, 2011; Kumah, 2011) have shown that membership with business association increases the likelihood of access to credit. It is so because McKenzie (2009) indicated that group liability is preferred by lenders since it reduces the problem of moral hazard and adverse selection which causes credit market failure. Group members serve as a check on each other to make sure that each entrepreneur invests the credit in the venture for which it was borrowed. Entrepreneur's affiliation with social networks or associations eases an enterprise's access to credit because associations usually develop good relationships with lenders (Pandula, 2011).

3.3.2 Enterprise Characteristics that Determine Access to Credit

A recent study in Ghana by Osei-Assibey (2014) indicated that the firm's age, ownership of a bank account and asset structure increase the probability of access to credit among rural enterprises. Also, firm characteristics like the size of the firm, a sector of business and fixed assets possessed are vital to access to credit in Ghana (Alhassan & Sakara, 2014).

Enterprise Size

From Pandula (2011), small enterprises are more likely to be credit constrained than large enterprises because of their failure to deliver financial information demanded by most financial institutions, and even if they do provide the information, most of their books and financial statements are not audited. Moreover, the smaller enterprises have no or less fixed assets to use as collateral to secure the loan; in addition, they have a higher risk of failure compared to large enterprises. Aryeetey et al. (1994) show that smaller enterprises are provided with credit three times less as often as medium-sized enterprises. The size of an enterprise is also a major benchmark for financial institutions to evaluate the creditworthiness of the enterprise (Kumah, 2011). The enterprise size is usually measured by the number of full time employees.

Enterprise Location

One vital factor most lending institutions consider is the nearness of the enterprise to their place of establishment (Kumah, 2011). A study by Ahmed and Hamid (2011) found a significant relationship between the enterprise location and access to credit in the sense that, those in the urban areas have a higher likelihood of access to credit compared to those in the rural areas. The reason being, the rural market is dispersed and has limited transactions (Deakins et al., 2010).

The enterprise location is defined by the population density and infrastructure available in the area (Pandula, 2011).

Enterprise Age

Empirical studies have shown that older firms are less likely to face challenges relating to credit access compared to new entrant and infant firms. For example, a study by Beck and Cull (2014) indicated that firms aged over 15 years are more likely to receive loans than those 6 to 15 years old, which are in turn more likely to receive loans than those 5 years or less.

Osei-Assibey (2014) postulated that older firms have acquired a good reputation over the years, and this increases their potential of accessing credit. Also, inadequate financial performance information provided by infant firms makes it hard for lending institutions to approve their loans. Moreover, new entrant and infant firms are less likely to meet the collateral requirement since they have not yet accumulated adequate fixed assets (Pandula, 2011).

Sector of the Enterprise

The sector or industry of the enterprise is a significant determinant of its access to credit. For instance, Kumah (2011) indicated that firms in the service sector tend to make a higher probability of accessing credit than those in the agricultural sector. Also, a study by Deakins et al. (2010) showed that SMEs in the manufacturing sector usually have credit constrain because more information is required from them by the lenders, especially in a case of new technology, new product or when the firm wants to diversify. This finding affirms that of Baah-Nuakoh (2003), which shows that manufacturing firms especially those in the area of furniture and garments are often credit constrained.

Enterprise's Asset Structure

Collateral security is a key determinant of access to credit because of the risk of defaulting and transaction cost related to SME lending (Berger, 2006). Since asset may serve as collateral, it reduces moral hazard behaviour of the borrower and possible losses of the lender (Bebczuk, 2004). As a result, empirical studies have shown that the firm's asset structure is a significant determinant of credit access. According to Osei-Assibey (2014), firms that own lands have a high probability of accessing credit among rural enterprises since the lands can be used as collateral which will cover for any losses in case of default. This finding concurs to that of Adomako-Ansah (2012), which indicated that 13 out of 15 banks and lending institutions in Ghana consider collateral as the most significant determinant of loan approval.

Conversely, other studies show that there is no significant relationship between asset structure and access to credit (Pandula, 2011). This is because the availability of the asset does not necessarily mean that it is going to be used as collateral for the loan. Also, the personal assets of the owner are not shown on the financial statement of the business. Bebczuk (2004) also agrees to this finding and he believed that banks are willing to take the risk by giving loans to some firms that do not have a concrete asset structure.

Performance of the Enterprise

Enterprise performance is a means by which lenders access the creditworthiness of the business because performing enterprises are more likely to pay back loans. Performance can be calculated using divers indicators such as an increase in sales or turnover ratio; profit and firm capacity utilization; labour productivity; and growth of export over time (Baah-Nuakoh, 2003; Bebczuk, 2004). Various studies have shown that larger sales revenue is associated with a high probability

of access to credit (Bebczuk, 2004). Poor performing firms often have their loan application rejected.

3.4 Conclusion

The financial gap in the enterprise sector is caused by both demand-side and supply-side problem. A supply-side problem occurs when the HE has a lucrative investment project but cannot have access to sufficient funds to finance it and a demand-side problem occurs when the HE is not creditworthy. This inability to finance is not because the lender does not have loans to give, rather because of lack of creditworthiness on the part of the HE is the reason for the demand-side problem. According to Abraham and Schmukler (2017), information asymmetry makes it difficult for lenders to monitor the actions of creditor and to enforce payments. This restricts the lending opportunities for all enterprises, including those with genuine potential.

From the literature reviewed, we notice that the enterprise financing gap varies from region to region, sector to sector, among others. Most of the literature on enterprise financing has revealed the nature of the credit access problem and the determinants of loan accessibility by SMEs and formal enterprises but there is limited literature on MEs and HEs. Knowing the nature of the credit access problem and the financial gap is essential to inform the right policies to address the problem and this is what this study seeks the do.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.0 Introduction

This chapter describes the conceptual framework; the econometric technique used; and also specifies the model to be estimated. It further describes the variables both dependent and independent with their expected signs and finally ends with the nature and description of the data to be used.

4.1 Conceptual Framework

The studies on access to loans have been conducted based on three main possible approaches to model construction. These three approaches are based on the demand and supply of factors of access to loans. The first approach is the supply factor model. This considers only the supply factors which affect loan access. In this model, the borrower's characteristics are ignored and the focus is only on the lender's characteristics. The second approach is the demand factor model. This model focuses on the characteristics of the borrower and all other factors affecting him (the borrower). The last method is the demand-supply factor model. This model encapsulates both the demand and supply factors which influence access to loans. This model takes into account both borrower and lender characteristics (Opoku-Mensah & Agbekpornu, 2015).

Most studies use the demand factor model because of the lack of data from the lenders (Kumah, 2011; Munira, 2013). Lenders are not willing to disclose or share sensitive information because it sometimes makes them vulnerable, and also indicates weakness in their operations. On the other hand, borrowers are more willing to disclose information since they are dying need of the loan.

The literature reviewed indicated that determinants of access to loans by HEs can be categorized into owner's characteristics and enterprise features. The reason being, the lenders assess the loan repayment ability and the creditworthiness of the enterprise by these factors. The HEs' access to loans is a function of entrepreneur's demographic and socio-economic characteristics and enterprises features: where entrepreneur's demographic and socio-economic characteristics consist of educational level, experience, gender, age, and household size. Also, enterprise characteristics like experience, holding of a bank account, sector of operation, location and registration of enterprise influence the enterprise's likelihood of accessing credit.

Following previous studies Kumah, (2011) and Gariba (2015), this study hypothesizes that the determinants of HEs' accessibility to loans is influenced by the entrepreneur's characteristics and enterprise characteristics:

Loan Access = $\boldsymbol{f(entrepreneur\ characteristics\ ,\ enterprise\ characteristics)}$

4.2 Model Specification

Following Gariba (2015), we model our study as follows:

$$\boldsymbol{ACCESS_i = \beta_i(Q_i\ ,\ E_i) + \varepsilon_i} \quad \text{.....} \quad (1)$$

$$\boldsymbol{DEMAND_i = \lambda_i(H_i\ ,\ R_i) + \mu_i} \quad \text{.....} \quad (2)$$

Where:

- Equation *(1)* and *(2)* represent the outcome equation and the selection equation respectively.

- $\boldsymbol{ACCESS_i}$ represents the probability that a HE has access to the loan, which is observed as '1' if the HE has its application for the loan granted and '0', if otherwise.
- $\boldsymbol{DEMAND_i}$ represents the probability that a HE has applied for a loan, which is observed as '1' if the HE applied for a loan and '0', if otherwise.
- $\boldsymbol{\beta_i}$ and $\boldsymbol{\lambda_i}$ are a vector of parameters for outcome and selection models respectively.
- $\boldsymbol{Q}$ is a vector of independent variables which represents the entrepreneur's characteristics that affect the HE's access to loan. $\boldsymbol{Q} =$ {age, age squared, gender, marital status, household size, education, diversification, experience}
- $\boldsymbol{E}$ is a vector of independent variables which represents the enterprise characteristics that affect the HE's access to loan. $\boldsymbol{E} =$ {sector, base of operation, financial record, savings account, household workers, HE age, HE size, asset}
- $\boldsymbol{H}$ is a vector of independent variables which represents the entrepreneur's characteristics that affect the HE's demand for loan. $\boldsymbol{H} =$ {age, age squared, gender, marital status, household size, education, diversification, experience}
- $\boldsymbol{R}$ is a vector of independent variables which represents the enterprise characteristics that affect the HE's demand for loan. $\boldsymbol{R} =$ {sector, base of operation, financial record, savings account, household workers, HE age, HE size, asset, future expansion}
- $\boldsymbol{\varepsilon_i}$ and $\boldsymbol{\mu_i}$ are the error terms of the outcome and selection equations respectively. It represents the unobservable factors which affect access and demand for loans.

This is a Heckman selection model, which implies that a HE has its loan granted only if it applied for the loan; meaning $\boldsymbol{ACCESS_i}$ =1 provided that $\boldsymbol{DEMAND_i}$=1. The assumption in this model is that the error terms are normally distributed, independent of the independent variables

and there is a correlation between them. That is $(\boldsymbol{\varepsilon_i}, \boldsymbol{\mu_i}) \sim \boldsymbol{N}(\mathbf{0}, \mathbf{1})$ and $\boldsymbol{corr}(\boldsymbol{\varepsilon_i}, \boldsymbol{\mu_i}) = \boldsymbol{\rho}$; where $\boldsymbol{\rho} \neq \mathbf{0}$.

The Heckman Probit Model will be used to estimate equations *(1)* and *(2)*. To ensure that the model is well identified, the selection equation must contain one or more variables that are not in the outcome equation (Baum, 2006). Therefore, for consistency in the estimations, the independent variables to be used in the demand for loan equation will exceed that of the access to loan equation. Based on previous studies Krasniqi (2010) and Gariba (2015), the study will include future expansion which affects an enterprise's demand for a loan but does not directly affect its access to a loan. However, if there is no existence of self-selection bias (that is if $\boldsymbol{\rho} = \mathbf{0}$) then only the outcome equation *(1)* will be the equation to be estimated using the Probit Model.

4.3 Estimation Models

The econometric technique for the estimations in this study is the Probit model. The Probit model will be used to estimate the determinants of access to total loans, formal loans, and informal loans.

4.3.1 The Probit Model

The selection of an econometric model for estimations is mostly dependent on the nature of the dependent variable. In a case where the dependent variable is limited dependent variable, the objective will be finding the probability of an occurrence of an event. Therefore the Probability Models are used for limited dependent variables regression (Gujarati, 2005). In a situation where the dependent variables are in two categories, that is either the HE has access to the loan or not,

it is then a binary dependent variable and hence a binary regression model is used. There are three methods adopted by researchers in such studies Linear Probability Model (LPM), Probit model and Logit model (Gujarati, 2005).

Stock and Watson (2011), postulates that out of these three techniques, the last two gives consistent and precise estimations. This is because several econometric models (such as LPM) used in evaluating the access of loans have failed to meet the statistical conventions and assumptions required to confirm the conclusions based on the hypothesis tested (Feder et al., 1985; Greene, 2009). This led to the discovery of Non-Linear Probability Models which are the Probit and the Logit models. This affirms the claim by Gujarati (2005) that, the Non-Linear Probability Models (Logit and Probit) are ideal compared to the LPM because of the limitations that come with using the LPM, where predicted probabilities may lie outside of 0 and 1. According to Brooks (2008), both the Logit and Probit techniques are based on the Maximum Likelihood Estimator and ensure that the predicted probabilities lie between the reasonable bounds of 0 and 1 inclusive. The distinction between the Logit and Probit models is that the Logit uses cumulative standard logistic distribution function whereas Probit uses cumulative standard normal distribution function. In this study, we would be using the Probit Model to estimates the determinants of access to loans by HEs in Ghana since its results are simple to interpret.

General Probit Model with a latent dependent variable by Stock and Watson (2011) is specified as:

$$\boldsymbol{Pr}(\boldsymbol{Y} = \mathbf{1}|\boldsymbol{X}') = \phi(\boldsymbol{X}'\boldsymbol{\beta}) \quad \text{.....} \quad (4.1)$$

This represents the probability that a HE will get access to the loan

Where:

- ϕ represents the cumulative standard normal distribution function
- X' is a vector of all the explanatory variable of the regression.
- β is the parameter to be estimated,
- ε is the error term which is independently, identically distributed with zero mean and constant variance.

The cumulative distribution function for the standard normal is given as:

$$\phi(\boldsymbol{X'\beta}) = \int_{-\infty}^{\boldsymbol{X'\beta}} \phi(\boldsymbol{z})\boldsymbol{dz} \quad \text{(4.2)}$$

The predicted probabilities are within the values of 0 and 1. The Probit model is estimated by Maximum Likelihood Estimation, and the marginal effect is derived as:

$$\frac{\boldsymbol{dy}}{\boldsymbol{dx}} = \phi(\boldsymbol{X'\beta}) \quad \text{(4.3)}$$

From our outcome model specified in equation *(1)*, the Probit model specification for the study will be:

$$\boldsymbol{Pr}(\boldsymbol{Y_j = 1}) = \phi(\boldsymbol{\beta_{ij}Q_{ij}} + \boldsymbol{\beta_{ij}E_{ij}} + \boldsymbol{\varepsilon_{ij}}) \quad \text{(4.4)}$$

Where $\boldsymbol{j}$ = {total loans access, formal loans access, informal loans access}

- total loans access: when a HE accesses a loan from any source
- formal loans access: when a HE accesses a loan from a registered financial institution
- informal loans access: when HE accesses a loan from an unregistered source

4.3.2 The Heckman Probit Model

In this study, HEs are assumed to have access to loans only if they applied for the loans. However, it would be difficult to ascertain the access to loans for enterprises that did not apply for a loan. And since it is the individual HE that makes the decision to apply or not to apply for a loan this makes the sample of HEs which applied for loans a non-random sample but rather a self-selected sample. Therefore, there is the possibility that basing our estimations only on those who applied for loans to make inferences for the whole population will overestimate the probability of access to loans due to the selection bias (Baum, 2006). Sample selection bias is due to non-random samples selected by data analysts or self-selection by sample respondent who are being studied (Heckman, 1979). Therefore estimations that do not take into account this problem will lead to specification error. The reason for the Heckman Probit regression is to solve the problem of selection bias.

The Heckman selection model is used in a case where there are two models (Y_1 and Y_2) in which the independent variables of Y_1 is observed if and only if Y_2 is observed. That is, Y_1 is conditioned on Y_2. Baum (2006) stipulated that, the Heckman selection model is used when a study is dealing with a subsample and the unobservable factors determining inclusion in the sample are correlated with the unobservable factors influencing a variable of interest. Therefore in this study, selection bias will only occur if the unobserved entrepreneur and enterprise characteristics that determines a HE's demand for a loan is correlated with the unobserved characteristics that affect access to the loan. This means that there exist a relationship between the demand for loans and access to loans.

The Heckman selection model is based on the assumption that the error terms in both models are normally distributed with 0 mean, constant variances and are correlated. And also the error term

of the explanatory variables are independent in both equations. To detect whether there exists a selection bias, the likelihood ratio test is used. The null hypothesis is that there exists no correlation between the error terms of the selection model and the outcome model (Gariba, 2015). The decision rule then is; if the correlation is statistically different from zero (0), the null is rejected implying that there exists selection bias and hence using the estimations of the Heckman Probit regression is appropriate. If there is no existence of selection bias, then we use the estimations of the normal Probit regression as shown in equation *(4.4)*.

4.4 Definition and Measurement of Choice of Variables

This section gives an explanation for the choice of dependent and independent variables used in this study. The motivation for the choice of these variables is based on a review of the literature on factors that influence the accessibility of loans.

4.4.1 Dependent Variables

This subsection provides a brief description of the dependent variables used in this study. These are dependent variables of access and demand for the total loans, formal loans, and informal loans. These variables are explained below.

4.4.1.1 Total Loans Access

Total Loan Access in this study is defined as a HEs' ability to access a loan from any source: be it formal or informal.

ACCESS is the dependent variable for the outcome model for total loans. It observes a value of '1' if a HE has its loan application approved and '0', if otherwise. In this study, a HE is said to

have access to a loan if and if only it applied for a loan during the 2012/2013 fiscal year and its application has been approved.

DEMAND is the dependent variable for the selection model for total loans. It observes a value of '1' if a HE applied for a loan and '0', if otherwise. In this study, a HE is said to demand loan if it applied for a loan during the 2012/2013 fiscal year.

4.4.1.2 Formal Loan Access

Formal Loan Access is defined as a HEs' ability to access a loan from a registered financial institution.

ACCESS is the dependent variable for the formal loans regression. It observes a value of '1' if a HE has its formal loan application approved and '0', if otherwise. In this study, a HE is said to have access to a formal loan if and if only it applied for a loan from a formal credit source during the 2012/2013 fiscal year and its application has been approved.

4.4.1.2 Informal Loan Access

In this study, Informal Loan Access is defined as a HEs' ability to access a loan from an unregistered financial institution or informal source.

ACCESS is the dependent variable for informal loans regression. It observes a value of '1' if a HE has its informal loan application approved and '0', if otherwise. In this study, a HE is said to have access to an informal loan if and if only it applied for a loan from an informal credit source during the 2012/2013 fiscal year and its application has been approved.

4.4.2 Independent Variables

This sub-section discusses all the independent variables and their expected signs in each of the loan markets.

Age: This is a continuous variable which defines the age of the entrepreneur, measured in years, as at the time of the survey. According to Baffoe and Matsuda (2015), age is assumed to have an inverse relationship with an entrepreneur's likelihood of access to loans. This is because the younger entrepreneurs are more energetic and efficient in their activities. However, the opposite is true for older entrepreneurs. Age is therefore expected to have a negative sign.

Also, age has a quadratic impact on access to loans (Magri, 2002; Chen & Chivakul, 2008). This quadratic relationship will be captured as '**Age squared**'. Chen and Chivakul (2008) explained this quadratic relationship to mean that young people prefer to borrow as they increase in age until they hit a particular age threshold, then this probability begins to decreases as they keep increasing in an age beyond the threshold. They argued that the expectation for income and the marginal utility of consumption for young people is very high and these increase their access to credit and also they have a high loan repayment probability.

Gender: This refers to the gender status of the entrepreneur. This is a dummy variable which is assigned the value '1' if the entrepreneur is a male and '0' if otherwise. Gender helps to ascertain the performance and efficiency differences between male and female entrepreneurs. Though we expect gender to be positively related to access to loans in the informal sector due to the special preference is given to males by informal credit providers (Baffoe & Matsuda, 2015), generally as indicated by Osei-Assibey (2014), there is no preferential treatment to any gender over the entire credit market.

Marital Status: This variable indicates the marital status of the entrepreneur. It is a dummy variable which is assigned '1' if the entrepreneur is married and '0' if otherwise. Marital status in this study implies: single entrepreneurs have fewer responsibilities hence they tend to have higher loan repayment ability than married entrepreneurs. Conversely, married individuals are less mobile and do not relocate as often as singles, therefore credit providers tend to confide more.

Household Size: This is a continuous variable with measures the number of people living in the household of the entrepreneur. It is the head count of all individuals in the entrepreneur's household. A previous study (Baffoe & Matsuda, 2015) indicated that large household size influences a household's decision to access loans for productive activities like business or farming. The study further stated that the reason is that, larger family sizes usually have access to abundant labour. Hence the expected sign for household size is positive.

Education: This is a dummy variable measuring the educational level of the entrepreneur. This variable is assigned the value '1' if the entrepreneur has attained a high level of education which is above the basic level and '0' if otherwise. Its coefficient could be either positive or negative. Generally, we expect an entrepreneur with a high level of education to have more knowledge about credit availability hence we expect a positive sign. A recent study (Alhassan & Sakara, 2014) has shown that, in the formal credit market, high education is a key factor for credit accessibility; therefore we expect a positive sign. Nonetheless, in the informal market, since most of the credit providers have low education, they relate best and trust the lenders with low education, therefore, we expect the sign for the informal credit market to be negative.

Diversification: This is a variable which explains whether the entrepreneur is engaged in another livelihood activity (that is another job). It is a dummy variable which takes the value '1' for the diversified entrepreneur and '0' otherwise. It is assumed that a diversified entrepreneur stands the chance of easily having access to loans because he/she has the ability to spread the risk that comes with borrowing among a number of income generating activities (Baffoe & Matsuda, 2015). The sign expected for diversification is positive.

Experience: This is a continuous variable which measures the number of years the entrepreneur has spent on the job. As entrepreneurs continue to work in their field, they gain experience in resources allocation and acquisition of credit and these serve as an indicator of the loan repayment ability and the level of efficiency of the HE (Gariba, 2015). Therefore, credit providers will be more willing to give loans to experienced entrepreneurs than inexperienced ones since the former has a higher probability of success. The more experienced the entrepreneur is the better his/her chance of accessing credit. The sign is expected to be positive.

Sector: This variable represents the sector of activity of the HE. It is a dummy variable which takes the value '1' if the HE is engaged in manufacturing and '0' if the firm is engaged in trade and services. According to Gariba (2015), this variable affects an enterprise's likelihood of accessing loans because of the sectorial risk, profitability, and loan repayment ability.

Base of Operation: This variable represents the place of operation of the HE. This is a dummy variable which is assigned '1' if the HE is home-based and '0' if otherwise. This variable is vital to the accessibility of loans because it predicts the profitability of the enterprise. Home-based enterprises are assumed to be less profitable hence having low loan repayment ability compared to market-based enterprises (Mead and Liedholm, 1998). The sign expected here is negative.

Financial Record: This is a dummy variable which takes the value '1' if the HE prepares financial records or bookkeeping records and '0' if otherwise. This variable measures the enterprise's transparency and this helps credit providers to estimate the creditworthiness of an enterprise (Krasniqi, 2010). The records help to assess the financial performance of the enterprise hence a very important determinant of access to loans. The expected sign is positive.

Savings Account: This is a dummy variable which takes the value '1' if the HE has a savings account and '0' if otherwise. Baffoe and Matsuda (2015) used this variable as a measure of the monetary worth of an enterprise. It is assumed that HEs with a saving account are more likely to access loans since their accounts can be used as collateral. A positive sign is expected for this variable.

Below is Table 4.1 showing a summary of all the variables including their units of measurement and their expected signs in each of the loan markets.

Table 4.1: Variables Definitions, Unit of Measurement and Expected Signs

Definition	Unit of measurement	Expected Sign on the Total loans access	Expected Sign on formal loan access	Expected Sign on informal loan access
Dependent Variables				
Access to Total loans	Dummy (1 if HE access loan, otherwise 0)			
Access to formal loans	Dummy (1 if HE access loan, otherwise 0)			
Access to informal loans	Dummy (1 if HE access loan, otherwise 0)			

Table 4.1 (cont'd)

Definition	Unit of measurement	Expected Sign on the Total loans access	Expected Sign on formal loan access	Expected Sign on informal loan access
Independent Variables				
Age	Years	**-**	**-**	**-**
Age Squared		**-/+**	**-/+**	**-/+**
Gender	Dummy (1 if entrepreneur is a male, otherwise 0)	**-/+**	**-/+**	**+**
Marital Status	Dummy (1 if entrepreneur is married, otherwise 0)	**-/+**	**-/+**	**-/+**
Household Size	Head count	**+**	**+**	**+**
Education	Dummy (1 if education is high, otherwise 0)	**+**	**+**	**+**
Diversification	Dummy (1 if entrepreneur is diversify, otherwise 0)	**+**	**+**	**+**
Experience	Years	**+**	**+**	**+**
Sector	Dummy (1 if manufacturing, otherwise 0)	**-/+**	**-/+**	**-/+**
Base of Operation	Dummy (1 if HE is home-based, otherwise 0)	**-**	**-**	**-**
Financial Records	Dummy (1 if financial records are kept, otherwise 0)	**+**	**+**	**+**
Savings Account	Dummy (1 if HE has a savings account, otherwise 0)	**+**	**+**	**+**
Household Workers	Head Count	**-**	**-**	**-**
HE age	Years	**+**	**+**	**+**
HE size	Continuous; number of workers	**+**	**+**	**+**
Asset	Dummy (1 if HE owns asset, otherwise 0)	**+**	**+**	**+**

Source: Author's compilation based on literature

Household Workers: This is a continuous variable which measures the number of workers of the HE who are household members of the entrepreneur. It is the head count of all the workers who are of the same household as the entrepreneur. As the number of household workers increases though the labour increases, the level of efficiency is likely to reduce (Samphantharak & Townsend, 2012). Therefore, the expected sign is negative.

HE age: This is a variable which measures how long the enterprise has been in existence. It is a continuous variable which indicates the number of years the enterprise has been in operation. Age of a HE is included since it gives an idea about the perpetuity of the enterprise and also serves as a good reputation of the HE in the accessibility of loans (Gariba, 2015). The expected sign is positive.

HE size: This variable is defined by the number of all the workers of the HE: household workers, entrepreneur and casual workers. It is a continuous variable. The size of the HE estimates the potential of the enterprise. Therefore larger HEs are assumed to be more likely to have access to loans. The expected sign is positive.

Asset: This variable is defined by the HE owning a machinery or vehicle. This is a dummy variable which is assigned '1' if HE owns a tangible asset and '0' if otherwise. This variable is included because the machinery or vehicle is an asset that can be used as collateral to secure loans; therefore it is a measure of creditworthiness (Osei-Assibey, 2014).

4.5 Source and Nature of Data

The World Bank's Informal Enterprise Survey (IFS) in Ghana for the year 2013 will be the source of data for this study. This is a survey that covered non-agricultural enterprises which are informal and privately owned by households. By informal, they are enterprises that are not registered with the Registrar's General Department. The data fits the description of a HE according to the ILO (2011).

The World Bank's IFS used a stratified sampling technique. Enterprises were stratified based on the sector of activity and geographical location. The sectorial stratification was designed as follows: four manufacturing sectors (food and beverages, chemicals and plastics, textiles and garments, other manufacturing) and two service sectors (retail and other services). For geographical location, enterprises were stratified based on the distribution of economic activities taking place in the four main regional urban centres namely; Accra, Tema, Takoradi, and Northern Sector (Kumasi and Tamale). The regions were then divided into 180 zones where at least four enterprises were randomly sample per zone. A total of 729 enterprises were surveyed.

CHAPTER FIVE

RESULTS AND DISCUSSION

5.0 Introduction

This chapter discusses the results of the study. It discusses the general distribution of HEs in Ghana, the greatest obstacles faced by HEs, and descriptive statistics of the dependent and independent variables. It further gives a summary statistics on sources of loans, reasons for not applying for loans. It discusses the results from the econometric analysis of determinants of accessibility to the total, informal and informal loans and concludes with some new financing strategies.

5.1 General Distribution of HEs based on IFS (2013)

This section discusses the general distribution of the IFS undertaken by the World Bank in Ghana in the year 2013. The IFS covered entrepreneurs of 729 enterprises in four main regions in Ghana. The distribution of the enterprises among the four regions is as follows: Accra 176, Northern Sector (consisting of Kumasi and Tamale) 189, Takoradi 180 and Tema 184. Table 5.1, shows the size and regional distribution of the enterprises surveyed.

From the data, we categorized the enterprises based on the International Labour Organisation (2011) which indicates that the size of a HE is based on the number of workers; the workers should not be registered or employed under a written contract. Table 5.1 shows the distribution of HEs by size and region. From the table, among the 729 household enterprises, 337 (about 46.2%) were sole proprietor enterprises, which had only one worker which is the entrepreneur.

Also, 349 enterprises (about 47.9%) were small HEs which constituted 2 to 5 workers and finally 43 enterprises (about 5.9%) were big HEs which were made up more than 5 workers.

Table 5.1: Distribution of HEs by Size and Region

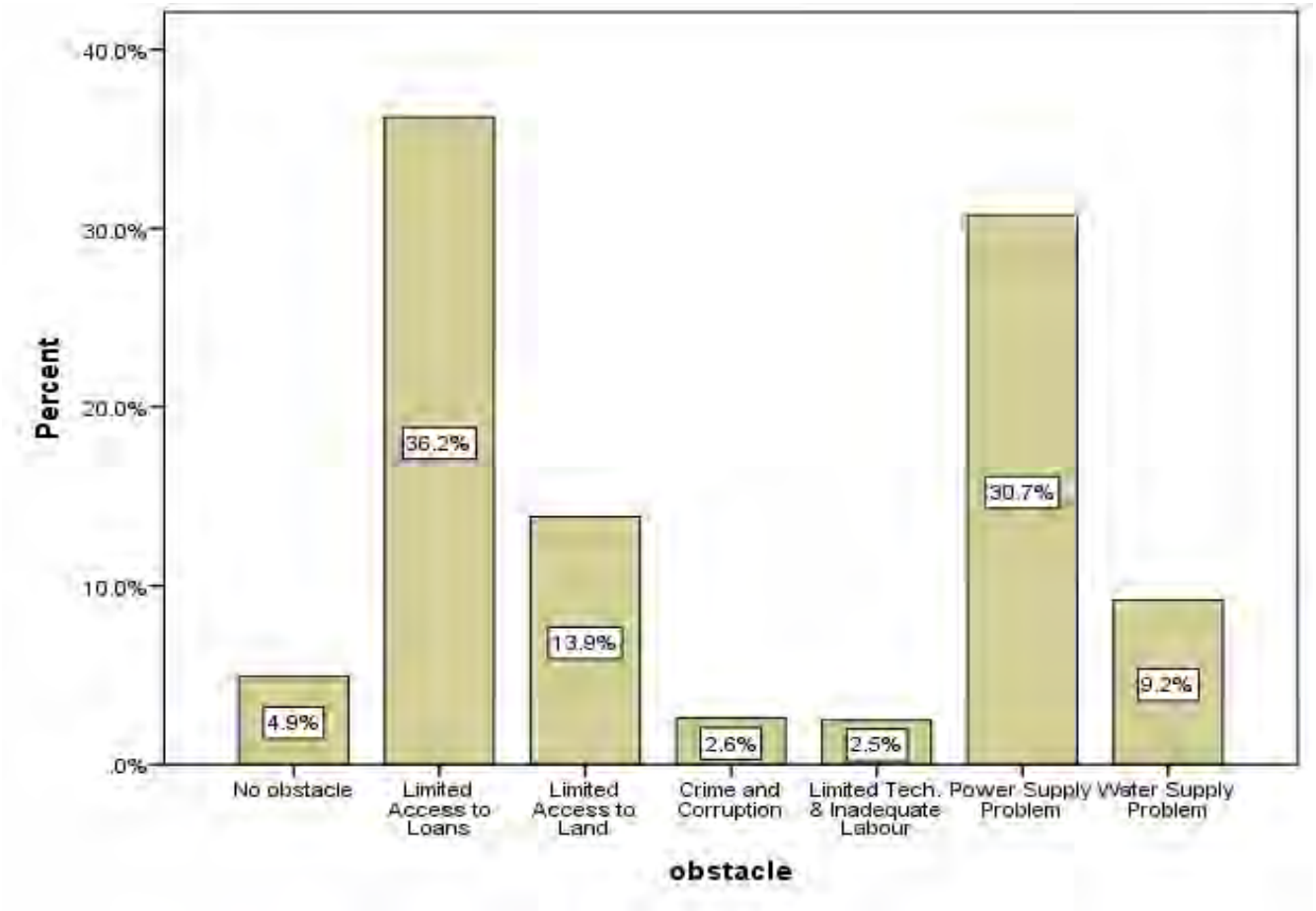
Size of Enterprise	Number of Enterprises in the Regions				Number of Enterprises
	Accra	Northern Sector (Kumasi & Tamale)	Takoradi	Tema	
Sole Proprietor (1 worker)	85	67	76	109	337
Small HEs (2 – 5 workers)	83	92	102	72	349
Big HEs (5+ workers)	8	30	2	3	43
Total	176	189	180	184	729

Source: Author's compilation based on IFS (2013)

5.2 Greatest Obstacle to HEs Operation in Ghana

The enterprises were asked to point out the greatest obstacle affecting the expansion and growth of the enterprises. 36 enterprises (about 5%) stated that they had no obstacle. The obstacles indicated by the enterprises from highest to least are limited access to loans (264 HEs), power supply problem (224 HEs), limited access to land (101 HEs), water supply problem (67 HEs), crime and corruption (19 HEs), and limited technology and inadequate labour (18 HEs).

Fig 5.1: Bar Chart showing the Obstacles facing the HEs



Source: Author's compilation based on IFS (2013)

Limited access to loans which was indicated by 264 enterprises (about 36%) is the greatest obstacle hindering the growth of the majority of the enterprises. This finding confirms the findings of other empirical studies (Osei-Assibey, 2014; Gariba, 2015) in Ghana indicating financial constraint as the principal challenge of enterprises. Fig 5.1 below shows the bar chart of the main obstacles facing HEs in Ghana.

5.3 Descriptive Statistics of Dependent Variables

5.3.1 Total Loans

To identify if an enterprise demanded a loan, it was asked if it applied for a loan in the 2012/2013 fiscal year. 489 (approximately 67%) out of 729 enterprises applied and 240 (approximately 33%) did not apply. Out of the 489 enterprises that applied for a loan, 310 enterprises had access to loans whilst the remaining 179 did not. Therefore the rate of access to loans by HEs is about 63% and a loan rejection or denial rate of about 37%. Table 5.2 shows the descriptive statistics of total loans market.

Table 5.2: Descriptive Statistic of Total Loans

Dependent Variables	Definition	Number of Enterprises	Percentage
Application for Loan	1= Apply for loan	489	67.08
	0= Did not apply for loan	240	32.92
Access to Loan	1= Loan granted	310	63.39
	0= Loan not granted	179	36.61

Source: Author's compilation based on IFS (2013)

5.3.2 Formal and Informal Loans

Enterprises that applied through a registered and established institutions were considered to be in the formal loans market, otherwise considered to be in the informal loans market. Among the 489 enterprises that applied, 179 of them applied for a formal loan and 310 applied for an informal loan. 109 (approximately 61%) out of the 179 formal loan applicants had access to the

loans whilst 70 (approximately 39%) of them did not have their loan application granted. For the informal loans market, 310 enterprises applied of which 210 (approximately 65%) had access to the loans and 109 (approximately 35%) did not have access. More HEs applied for loans in the informal loans market than the formal and also the loan accessibility rate in the informal loans market (approximately 65%) is better than that of the formal (approximately 61%). This confirms the findings of previous studies (Beck & Demirgüç-Kunt, 2005; Nkuah et al., 2013; GSS, 2014) which indicated that since most HEs face limited access to loans and also cannot meet the requirement of the formal loans market, they (HEs) tend to resort to informal loans market. Table 5.3 shows the breakdown of formal and informal loans.

Table 5.3: Descriptive Statistic of Formal and Informal Loans

Type of Loan	Definition	Number of Enterprises	Percentage
Formal Loans	Applied	179	
	Access	109	60.89
	No access	70	39.11
Informal Loans	Applied	310	
	Access	201	64.84
	No access	109	35.16

Source: Author's compilation based on IFS (2013)

5.4 Sources of Loans

The enterprises that had access to loans, which were not financially constraint, were asked to indicate the very source they received their loans. Table 5.4 shows the distribution of sources of loans. For those who applied to a registered institution (formal source), out of the 109 that had access to loan, 23 (approximately 21%) had their loans from banks and 86 (approximately 79%)

had their loans from micro-credit institutions. This is due to the fact that most of the banks are more complex with the application process and often deal with registered firms, but the micro-credit institutions tend to be concise with the application process and make room for unregistered enterprises that are seeking for loans (Abor & Quartey, 2010).

Table 5.4: Sources of Loans

Sources of Loan	Number of Enterprises	Percentage (%)
Formal Sources		
• Banks	23	21.10
• Micro-Credit Institutions	86	78.90
Informal Sources		
• Money Lenders	13	6.47
• Input Suppliers or Customers	89	44.28
• Relatives and Friends	54	26.87
• Others	45	22.39

Source: Author's compilation based on IFS (2013)

Also, in the informal loans market, 201 enterprises had access to loans; 13 (about 6.5%) of them had access to loans from money lenders, 89 (about 44.3%) had access to loans from suppliers or customers, 54 (about 26.9%) had loans from relatives and friends, and 45 (about 22.4%) had loans from other informal sources. Most of the enterprises had loans from suppliers or customers. This is known as trade credit and it is often based on trust and integrity and often times such loans are granted immediately; just at the time of the request. This is very common in the informal sector.

5.5 Main Reasons for Not Applying

Concerning the enterprises that did not apply for loans, we cannot know if they would have been financially constrained (application denied) or not. Those enterprises were asked to indicate the reason for not applying for a loan. Out of the 240 enterprises that did not apply for a loan, 108 (45%) of them stated that they did not have a need for a loan. Table 5.5 below shows the reasons.

Table 5.5: Main Reason for Not Applying for a Loan

Reason	Number of Enterprises	Percentage (%)
No need for a Loan	108	45.00
Complex Application Procedures	39	16.25
High-Interest Rates	77	32.08
Lack of Required Guarantees	11	4.58
Non-registration of Enterprise	3	1.25
Other reasons	2	0.83
Total	240	100.00

Source: Author's compilation based on IFS (2013)

The rest needed a loan but for some reasons did not apply. From Table 5.5 above, 77 enterprises (about 32%) out of the 240, which represented the majority, indicated that the high level of interest rate was the reason for not applying. This finding supports that of Alhassan and Sakara (2014) and Gariba (2015) which stated that the primary reason for enterprises not applying for loans even when they need them is because of unfavourable interest rates. Complex application procedure was indicated by 39 enterprises (about 16%) as a reason for not applying. Lack of

guarantees and non-registration of the enterprise were indicated by 11 (about 5%) and 3 (about 1%) enterprises respectively as reasons for not applying. 2 enterprises (less than 1%) indicated other reasons outside this domain.

5.6 Descriptive Statistics of Independent Variables

This section gives a detail statistical distribution and overview of the independent variables used in this study. It is made up of 6 continuous variables and 9 dummy variables. Table 5.6 shows a summary of all the descriptive statistics of the independent variables.

Age: To begin with, the age distribution of the survey ranges from 18 years to 80 years with an average age of about 39 years. The majority (over 50%) of the entrepreneurs were between 31 to 45 years, with just about 5% who were above 60 years of age. Approximately 23% and 21% were in the age brackets 18-30 years and 46-60 years respectively.

Household Size: The household size of the entrepreneur ranges from 1 to 65 people with an average of approximately 6 people. Most of the households were within the size bracket of 1-5 people (approximately 59%), followed by 6-10 people (approximately 36%) and finally those households with size more than 10 people are just about 5%.

Experience: The entrepreneurs' experience average 8 years which ranges from no experience (0 years) to 50 years of experience. The majority (about 44%) of the entrepreneurs were in the range of 0-5 years of experience, followed by 6-10 years and more than 10 years which approximated 26% and 30% respectively.

Household Workers: The number of household workers ranges from 0 to 10 members, with an average of approximately 1 member. 426 enterprises (about 58%) employed no household member, 292 enterprises (about 40%) employed 1 to 3 members and 11 enterprises (about 2%) employed 4 to 10 members of their household.

HE age: The survey showed that age of the enterprise ranges from less than a year old to 53 years with an average of 8 and half years. The study then followed the categories used by Abor and Biekpe (2006) to further group them. There were 20 infant enterprises (less than 1 year), 321 young enterprises (1 to 5 years), 201 adult enterprises (6 to 10 years) and 187 matured enterprises (more than 10 years). This distribution of the age of the enterprise confirms the results of Fox and Sohnesen (2012) which indicated that survival of HEs tends to reduce as the enterprise approaches maturity.

HE size: the enterprises averaged a size of 2 workers. 337 enterprises (approximately 46%) were sole proprietor (1 worker), 349 enterprises (approximately 48%) were small HEs (2 to 5 workers) and only 43 enterprises (approximately 6%) were big HEs (more than 5 workers).

Gender: The survey results show that there are 271 male-owned enterprises and 458 female-owned enterprises. Among the 310 entrepreneurs who had access to loans, 119 are males and 191 are females. Therefore male entrepreneurs have greater access to loans than female entrepreneurs; that is 43.9% against 41.7% respectively.

Marital Status: Also, the survey shows that 470 (about 64%) of the entrepreneurs are married of which 217 had access to loans and 259 (about 36%) unmarried of which 93 had access to loans.

Education: The results of the survey also categorizes education into five main groups which are no education (13%), basic education (45%), secondary education (30%), vocational education

(8%) and tertiary education (4%). But for the sake of this study, education was categorized into high education (secondary, vocational and tertiary education) and low education (no education and basic education). Out of the 310 entrepreneurs who had access to loans, 122 have high education and 188 have low education implying that those with low education have approximately 45% rate of access to credit, which is greater than the 39% of that of high education.

Diversification: From the survey, the majority (approximately 95%) of the entrepreneurs are not diversified. This confirms the findings of previous studies (Haggblade et al., 2010; Fox and Sohnesen, 2012) which indicate that HEs often serves as the only or main source of livelihood for most of the household of the entrepreneurs.

Sector: The survey covered an approximately equal number of enterprises in manufacturing, and retail and services sectors; 365 and 364 respectively. Those in the retail and services sector have a higher rate of access to loans (approximately 47%) than those in the manufacturing sector.

Base of Operations: The survey revealed that 585 enterprises (about 80%) are market-based whereas 144 enterprises (20%) are home-based. Most of the market-based HEs (249 enterprises) had access to loans than those that are home-based (64 enterprises).

Financial Records: Just about 33% of the enterprises kept records. This supports the findings of Samphantharak and Townsend (2012) which states that most HEs do not keep any financial records and keep their operations at the informal level.

Table 5.6: Descriptive Statistics of Independent Variables

Continuous Variables	Number of Enterprises (N=729)	Percentage (%)	Min	Max	Mean
Age			18	80	39.44
• 18-30 years	171	23.46			
• 31-45 years	370	50.75			
• 46-60 years	151	20.71			
• 60+years	37	5.08			
Household Size			1	65	5.72
• 1-5 people	429	58.85			
• 6-10 people	265	36.35			
• 10+ people	35	4.8			
Experience			0	50	8.49
• 0-5 years	320	43.90			
• 6-10 years	191	26.20			
• 10+ years	218	29.90			
Household Workers			0	10	0.64
• 0 member	426	58.44			
• 1-3 members	292	40.05			
• 4-10 members	11	1.51			
HE age			0	53	8.50
• Infant: less than 1yr	20	2.74			
• Young: 1-5years	321	44.03			
• Adult: 6-10years	201	27.57			
• Mature: 10+years	187	25.65			
HE size			1	30	2.29
• 1 worker	337	46.23			
• 2-5 workers	349	47.87			
• 5+ workers	43	5.90			

Dummy Variables	Number of Enterprises (N=729)	Percentage (%)	HEs that have access to loans	
			No. of Enterprises (n=310)	Percentage (%)
Gender				
• Male	271	37.17	119	43.91
• Female	458	62.83	191	41.70
Marital Status				
• Married	470	64.47	217	46.17
• Otherwise	259	35.53	93	35.90
Education				
• High education	309	42.39	122	39.48
• Low education	420	57.61	188	44.76
Diversification				
• Diversified	31	4.25	15	48.39
• Not diversified	698	95.75	295	42.26
Sector				
• Manufacturing	365	50.07	138	37.80
• Retail & Services	364	49.93	172	47.25
Base of Operation				
• Home-Based	144	19.75	64	44.44
• Otherwise	585	80.25	246	42.05
Financial Records				
• Records	240	32.92	96	40.00
• No records	489	67.08	214	43.76
Savings Account				
• Holds account	293	40.19	128	43.69
• No account	436	59.81	182	41.74
Asset				
• Owns Asset	295	40.47	114	38.64
• Otherwise	434	59.53	196	45.16

Source: Author's compilation based on IFS (2013)

Savings Account: In addition to the fact that they operate at the informal level, they do not have bank accounts for the operations of the enterprise. The survey showed that about 60% do not have a saving account and just 40% of the HEs save with formal financial institutions.

Asset: Concerning assets ownership, the majority (approximately 60%) of the HEs do not own assets. The assets in this survey entailed machinery and vehicles. Among the 295 (about 40%) enterprises that own assets, 182 (about 62%) of them own machinery, 72 (about 24%) own vehicles and 41 (about 14%) own both machinery and vehicle.

5.7 Empirical Determinants of Access to Loans

This section presents the results for the regression results from the Heckman Probit and Probit regression estimates. The Probit estimation results for total loans access is presented in Table 5.7 and that of formal loans access and informal loans are presented in Table 5.8. The appendix also shows the estimations of the Heckman Probit (Table 3a) and the Logit regressions (Tables 1a and 2a)

5.7.1 Heckman Probit Estimation of Determinants of Access to Loans

This subsection talks about the results from the Heckman Probit regression with sample selection for access to total loans. Demand for loans and access to loans are the dependent variables of the selection and outcome models respectively.

The Wald test for the significance of the overall model has a probability of [(P> chi2) = 0.0007] which means that the independent variables used in the study explain the dependent variables which are demand and access to loans. This means that the independent variables are jointly significant. Also, the correlation between the error terms of the selection and outcome models is

represented by rho **(ρ)**= -0.2441. Since the correlation coefficient is not close to zero (that is 24%), it means the self-selection is not random (Baum, 2006). The value of rho (which is -0.2441) implies that the unobserved factors that influence demand for loans are negatively related to the unobserved factors that influence access to loans.

From Table 3a in the appendix, we can see that the likelihood ratio test of independence between demand and access to loans is not statistically significant since the probability value of the correlation coefficient is [(P > chi2) = 0.8523]. This result supports that of Gariba (2015) which indicates that there is no self-selection in the credit market of enterprises. Also, from Table 3a, we can see that the Heckman Probit estimates showed that gender, household size, and size of the HE are significant factors that influence HEs' access to loans. All the significant variables showed a significant positive relationship with access to loans. Gender indicated a marginal effect which means that male entrepreneurs have a 12.2% chance of access to loans more than their female counterparts. Household size also showed that an increase in the household size by one person will increase an entrepreneur's probability of access to a loan by 1.8%. Finally, the size of HE indicated that as the size of the enterprise increases by a worker, the probability of the HE's access to loans increases by 3.4%.

In summary, we can say that there is a non-random insignificant negative relationship between the unobserved factors of demand and access to loans for HEs. This means that there is no self-selection bias in this model hence the ordinary Probit estimation of access to loans is carried out.

5.7.2 Probit Regression Estimates of Determinants of Access to Total Loans

The determinants of access to total loans (formal and informal loans altogether) by HEs are estimated by the Probit model and the results are presented in Table 5.7. From the results, the

model has a Wald chi-square statistic value of 38.57 which has a probability value [(P> chi2) = 0.0013] hence significant at 1%. This means that the independent variables jointly explain the access to total loans. Access to total loans is statistically determined by four factors. These factors are gender, household size, size of HE and asset structure. These were the same variables predicted by the Heckman Probit model except for asset. Three of these with definite expected signs assumed their expected signs.

To start with, the coefficient of gender is positive and statistically significant at 1%. This suggests that male entrepreneurs stand a higher chance to access loans than their female counterparts. The marginal effect was also calculated to tell the magnitude of the effect. This means that a male entrepreneur has a 12.9% chance of access to loans more than a female counterpart. The reason for this is that male entrepreneurs often take risks and tend to be more profitable hence possess higher repayment ability than female-owned enterprises. This finding is in line with that of Cole and Mehran (2009) and Awunyo-Vitor and Abankwah (2012) who show that males have a higher likelihood of access to loans. Awunyo-Vitor and Abankwah (2012) argue that women do not often have the requirements such as collateral to acquire a loan.

In addition, the household size significantly influences access to loans positively. This implies that entrepreneurs with larger household size are more likely to have access to loans than those with smaller household size. The marginal effect shows that an increase in household size by one person will increase an entrepreneur's probability of access to a loan by 2.1%. Though larger households are noted for the high demand for loans due to the high level of dependency, they often have abundant labour which can be put to effective use to expand their enterprises and also to increase profit and loan repayment ability. This is consistent with the study of Baffoe and Matsuda (2015).

Table 5.7: Probit Regression Estimates of Determinants of Total Loans Access

Dependent Variable: Total Loans Access

Variables	Coefficient	Marginal Effect	P-value
Age	0.0438	0.0162	0.173
Age Squared	-0.0005	-0.0002	0.128
Gender	**0.3590**	**0.1290*****	0.008
Marital Status	0.0156	0.0058	0.909
Household Size	**0.0577**	**0.0214****	0.016
Education	-0.1741	-0.0648	0.194
Diversification	0.2247	0.0794	0.422
Experience	0.0200	0.0074	0.174
Sector	-0.1702	-0.0632	0.197
Base of Operation	0.1272	0.0463	0.422
Financial Records	-0.1002	-0.0373	0.480
Savings Account	0.0041	0.0015	0.975
Household Workers	-0.0757	-0.0280	0.304
HE age	-0.0133	-0.0049	0.388
HE size	**0.1040**	**0.0385****	0.023
Asset	**0.2835**	**0.1024****	0.038
Con	-1.1128		
Number of Observations = 489	Wald chi2 (16)= 38.57		Prob>chi 2= 0.0013
Pseudo R2= 0.0682		Log likelihood= -299.29427	

Note: ***, **, * significant at 1%, 5% and 10% respectively

Source: Author's compilation based on IFS (2013)

Furthermore, the size of the HE has a significant impact on access to loans. The relationship between them is a positive significant relationship. This means that the larger the enterprise the better its chances of accessing loans. From the marginal effects, as the size of the HE increases by a worker, the probability of the HE's access to loans increases by 3.9%. An increase in the size of the HE is a measure of expansion and growth of the enterprise hence credit providers use that as a measure of creditworthiness. This result is consistent with Pandula (2011), where he argued that large enterprises are more likely to have access to loans because they are in the position to amass all the required collateral and requirements needed for the loan and they also have a better loan repayment capability due to their high level of profitability. But in the case of HEs, this study believes the reason for this result is that larger HEs have the potential of survival over a longer period of time hence credit providers have confidence in them than the smaller HEs.

Moreover, the asset structure of the HE also influences its access to loans. There is a positive and significant relationship between assets and access to loans of HEs. The asset variable here is significant at 5%. The interpretation is that HEs which own an asset has a better chance of access to loans than those that do not own an asset. The marginal effect shows that enterprises that own an asset have a 10.2% chance of access to loans than those that do not own an asset. This result concurs with many previous studies (Bebczuk, 2004; Adomako-Ansah, 2012). The explanation for this is that the asset can be used as collateral to secure the loan. According to Bebczuk (2004) when assets are used as collateral, it reduces the level of moral hazard and helps reduce defaulting of loans.

The Probit regression determinants of access total loans are the same as and consistent with the ones estimated by the Logit regression in the Appendix Table 1a.

5.7.3 Probit Estimates of Determinants of Access to Formal and Informal Loans

This subsection discusses the findings of the Probit regressions for formal and informal loans independently and it is represented in Table 5.8. Also, we can see the Logit estimations of access to formal and informal loans in Table 2a in the appendix.

5.7.3.1 Determinants of Access to Formal Loans

The Probit estimation for the determinants of access to formal loans is presented on the left side (first and second columns) of Table 5.8. From the table, we can see that the number of observations is 179 and this represents the number of HE that applied for a loan from a formal source. From the regression, there is a Wald chi-square value of 23.22 with a probability value [(P> chi2) = 0.10]. This means the independent variables are jointly significant at exactly 10% and they explain the access to formal loans. The estimation shows that there are four factors that statistically influence access to formal loans which are the experience of the entrepreneur, age of HE, size of HE and possession of asset. All these significant variables assumed their expected sign but age of the HE showed otherwise.

The entrepreneur's experience showed a positive and significant relationship with access to formal loans. This means that as the entrepreneur becomes more and more experienced the better his/her chances of securing a formal loan. Based on the marginal effect we can see that there is a 4.1% increase in the probability of a HE access to formal loans given a year increase in the experience of the entrepreneur. This finding is consistent with a study by Deakins et al. (2010). The reason for this is that experienced entrepreneurs are more efficient and they allocate the resources (which the loan is a part) efficiently in order to maximize profit hence they are noted to possess higher loan repayment ability (Gariba, 2015).

Also, the age of the HE also influences its access to formal loans. There is a negative and significant relationship between the age of the enterprise and access to formal loans. This unexpected negative relationship means that the older the enterprise, the lesser its chances of securing a formal loan. The marginal effect shows that as the enterprise is a year older its probability of access to formal loans decreases by 2.6%. This contradicts the finding of Beck and Cull (2014) which states that the older the enterprise, the lesser its chances of being credit constraint. The explanation to this seemly unusual finding is that most HEs tend to collapse just after a few years and they lack continuity (Fox and Sohnesen, 2012), therefore their chances of accessing loans from formal sources tend to reduce as the years go by.

Size of the HE significantly influences access to loans from formal sources. The estimation shows a positive and significant relationship between the size of the HE and its access to formal loans. As the HE increases in size, its chances of securing a formal loan also increases. The marginal effect shows a 6.2% increase in the probability of access to formal loans as the size of the HE increase by one worker. This finding is also consistent with that of Pandula (2011).

Finally, possession of an asset is also a significant determinant of access to formal loans. The table shows a positive relationship between asset and access to formal loans. This means that a HE with an asset (be it in a form of machinery or vehicle or both) has a higher chance of securing a formal loan than a HE without an asset. The marginal effect shows a 13.8% increase in the probability of access to formal loans of an enterprise that owns an asset compared to those that do not. To conclude on determinants of access to formal loans, Table 5.8 shows that all the variables have no significant influence on access to formal loans with the exception of the four above. The Logit estimation in Table 2a in the appendix attests to this findings.

Table 5.8: Probit Regression Estimates of Determinants of Formal and Informal Loans Access

Dependent Variable:	Formal Loan Access		Informal Loan Access	
Variables	**Marginal Effect**	**P-value**	**Marginal Effect**	**P-value**
Age	0.0021	0.910	0.0227	0.147
Age Squared	-0.00005	0.800	-0.0003	0.101
Gender	0.1176	0.169	**0.1493****	0.012
Marital Status	-0.0274	0.746	0.0218	0.736
Household Size	0.0163	0.263	**0.0224***	0.060
Education	0.0227	0.788	-0.1025	0.109
Diversification	0.2127	0.182	0.0653	0.569
Experience	**0.0233***	0.066	0.0013	0.825
Sector	-0.0606	0.470	-0.0375	0.544
Base of Operation	0.1295	0.180	-0.0196	0.792
Financial Records	-0.1286	0.156	0.0063	0.924
Savings Account	-0.0874	0.310	0.0510	0.406
Household Workers	-0.0437	0.445	-0.0329	0.300
HE age	**-0.0260****	0.035	0.0085	0.193
HE size	**0.0615****	0.043	0.0346	0.132
Asset	**0.1382***	0.094	0.0770	0.225
	Number of Observations = 179		Number of Observations = 310	
	Wald chi2 (16) = 23.22		Wald chi2 (16) = 29.54	
	Prob>chi2 = 0.1081		Prob>chi2 = 0.0206	
	Pseudo R2 = 0.0997		Pseudo R2 = 0.0958	
	Log likelihood = -107.8421		Log likelihood = -181.76075	

Note: ***, **, * significant at 1%, 5% and 10% respectively

Source: Author's compilation based on IFS (2013)

5.7.3.2 Determinants of Access to Informal Loans

The estimation for the determinants of access to informal loans is also presented on the right side (third and fourth columns) of Table 5.8. The number of observations, in this case, is 310 which represent the number of HEs that applied for an informal loan. The Wald chi-square value is 29.54 with a probability value [(P> chi2) = 0.0206] which means the independent variables are jointly significant at 5% and they explain the access to informal loans. Only two factors from the estimation have a significant relationship with access to informal loans. These are gender and household size. Both of them had their expected signs.

The gender of the entrepreneur has a positive and significant influence on access to informal loans. This means that male entrepreneurs are more likely to have access to informal loans compared to female entrepreneurs. The marginal effect shows that a male entrepreneur has a 14.9% chance of access to informal loans more than a female entrepreneur. The reason for this result is, aside from the fact that male entrepreneurs tend to have higher loan repayment ability, the traditional and informal credit providers in Ghana look down upon female entrepreneurs.

The household size of the entrepreneur also influences HEs' access to informal loans. It is a positive relationship which is statistically significant at 5%. This implies that entrepreneurs with larger household size are more likely to have access to informal loans than those with smaller household size. The marginal effect shows that an increase in household size by one person will increase the HE's probability of access to an informal loan by 2.2%. This is consistent with a study by Zapata (2006) which stated that larger households often demand loans from informal sources and due to their abundance of labour they usually secure such loans.

Moreover, Table 5.8 shows that education is approximately significant at 10%. Education shows a negative relationship with access to informal loans. This means that entrepreneurs with low education (basic level and below) have a higher chance of access to informal loans than those with high education (above the basic level). The marginal effect shows that entrepreneurs with higher education have a 10.3% decrease in the probability of access to informal loans compared to those with lower education. This result was expected since most of the entrepreneurs of HEs are school dropout. Since there is no or little paperwork required in the informal loans sector, these low level educated entrepreneurs tend to be more comfortable applying for loans in this sector. Hence they dominate the sector and this increases their chances of accessing loans.

5.8 New Financing Strategies

This section will elaborate on some strategies which can be used to finance HEs. Financing of HEs may vary from country to country depending on the nature and structure of the HE sector (World Bank, 2018). Therefore, the strategies in this study were drawn based on the descriptive statistics and the nature of HEs in Ghana. In order to properly make these strategies efficient, the various actors have to be involved. The entrepreneurs, the financial institutions, the government, and other NGOs must all know what precisely they ought to do to help in closing the financial gap facing HEs.

Entrepreneurs

Entrepreneurs should understand the dynamics of loan application. They need to know that no lender would invest in a business without potential. So there is the need for HEs to present themselves as viable enterprises and be convincing enough by proving to be creditworthy. They

can do this by preparing project proposals and keeping records. The entrepreneurs should also embark on training to improve their skills in order to make them more efficient in the management and allocation of resources. Also, entrepreneurs should be educated on the need for keeping financial records because the majority (67%) of them do not keep financial records. Since approximately 60% of the entrepreneurs in the HE sector have at most basic education, there is the need to educate them on the importance of keeping a financial record. They may see it as challenging but they can adopt the simple bookkeeping method which reports on inventory and profit. Furthermore, when entrepreneurs were asked what would increase their chances of accessing a loan, over 70% indicated that by formalizing their activities. This increases their chances of accessing a loan by signaling to the lender their creditworthiness.

Financial Institutions

The formal financial institutions (banks) need to see HEs as a strategic sector for expansion of their operations. It is a sector with great potentials and if the banks see it as such they will also benefit greatly. Although it is a sector full of risk, the profits and benefits are undeniable. The banks, therefore, need to ease down a bit on the issue of collateral and also focus on the potential of the business proposal of the entrepreneur. They need to also make the repayment conditions quite flexible by increasing the maturity period of loans for HEs. Also, lending is not the only service banks can provide for HEs. The banks should go beyond the lending services by organising training programmes to educate entrepreneurs who bank with them and those who do not. They can educate them on the loan application process, writing of a business plan, capacity building, how to keep financial records, and many more. The experience of formal financial institutions over the years by working with large enterprises far exceed that of the informal financial sector, hence making them the best choice for a long-term financial relationship. Their

understanding of enterprise survival skills, surviving start-ups and other enterprise related issues will certainly be beneficial to the growth of HEs. This will improve the HEs' survival rate, by making them more profitable and less credit constrained. The banks will also benefit since those entrepreneurs will recommend them to their colleague entrepreneurs.

Government and NGOs

The government should provide education for entrepreneurs of HEs on how to manage their business in a manner to attract investments. The government should focus on improving the financial literacy of entrepreneurs. This will help entrepreneurs take advantage of the available financial services and also avoid risks. Depending on the level of sufficient financial education, entrepreneurs can then take advantage of the existing government and non-government financial schemes. In most cases, entrepreneurs in the informal sector are not aware of the various financial options at their disposal. Over 53% of HEs have been in business for 5 years or more but they are ignorant of the available financial schemes except for bank loans. There are the likes of Promotion of Small and Micro Enterprise Fund (PSME), Support for Private Enterprise Expansion and Development (SPEED), and Funds for Small and Medium Scale Enterprise Development (FUSMED), but most of the entrepreneurs are ignorant. This is because often times awareness of these schemes are done only in a few capital cities, such as Accra and Kumasi. The issue of awareness has been talked about in most research (Abor & Biekpe, 2006), but the problem is the scope of awareness. The government and NGOs who provide these schemes should embark on an awareness which goes beyond the capital cities to small towns and villages.

One of the main reasons for HEs' credit constraint is because of the nature of risk which is associated with their operations. Therefore the government should encourage the formation of

enterprise associations to serve as a credit guarantee for those that may apply for loans. Through a large number of members of these associations, the risk related to HE loans can then be spread out.

The study reveals that operating a HE serves as the only livelihood of majority (96%) of the household. Hence the government needs to produce an enabling environment for more HEs to spring up since this can solve the problem of unemployment and eradicate poverty. The government must focus on providing uninterrupted power and water supply. This is because power and water are also major obstacles facing HEs. By this their quest for obtaining loans to solve power and water problems is curtailed. This will indirectly prevent the need for the loan for some HEs.

5.9 Conclusion

The findings from this study showed that access to finance is the greatest obstacle to most of the HEs in Ghana. Most of them do not demand loans although they need it because of the high-interest rate, complex application procedure and lack of guarantees hence the majority of HEs do prefer the informal credit sector over the formal.

The Heckman Probit estimation showed that there is no selection bias hence the need for the study to use the ordinary Probit model. Therefore, the factors that significantly influenced total loans are gender, household size, HE size and possession of asset. In addition, entrepreneur's experience, age of the HE, size of the HE and possession of asset are the determinants of formal loans, whereas gender and household size are the determinants of informal loans. Also, some new strategies for financing HEs were outlined.

CHAPTER SIX

SUMMARY, CONCLUSION, AND RECOMMENDATION

6.0 Introduction

This chapter provides the summary and conclusion of this study. It also makes policy recommendations. Finally, it talks about the limitation of the study and areas in which further research can be undertaken.

The study was motivated by the fact that the greatest obstacle to most of the HE is access to loans. The study had the following objectives; identify and estimate the determinant of HEs' access to loans in general, identify the determinants of HEs' access to formal loans and also that of informal loans, and outline some new financing strategies for HEs. The study used the Informal Enterprise Survey (IFS) 2013 conducted by the World Bank which involved 729 enterprises. The Heckman Probit regression was first used to detect if there exist self-selection problem in the enterprise's decision to apply for a loan. This is because estimating by using only the same enterprises that applied for loans can lead to selection bias since the selection process is non-random.

6.1 Summary

The Heckman Probit results showed that there is not enough evidence to conclude that the sample selection is bias hence there is no selection-bias, therefore, the ordinary Probit regression is the best method to use in this study. The Probit regression for access to total loans, that is

formal and informal loans market altogether, identified gender, household size, HE size and possession of asset as the significant determinants.

With the entrepreneurial characteristics, the study found that male entrepreneurs are more likely to access loans than female entrepreneurs. Also, the size of the household of the entrepreneur is a key determinant. This means that larger households have a higher probability of accessing loans than smaller households. The larger the household the better the HE's chances of accessing loans.

Moreover, the significant enterprise features are HE size and possession of asset. The size of the HE indicates that larger enterprises have a higher likelihood of accessing loans. Also, enterprises which possess an asset have a better chance of accessing loans.

The study also estimated the determinants of access to loans only in the formal loans market using the ordinary probit regression. The significant determinants are experience, HE age, HE size and possession of asset. The only significant entrepreneurial characteristic, in this case, is experience. The experience of the entrepreneur implies that more experienced entrepreneurs have a better chance of accessing formal loans than the inexperienced ones. The more experienced the entrepreneur, the better the HE chances of accessing loans.

In the case of the enterprise characteristics, age of HE indicates that the older enterprises have a lower probability of accessing formal loans, and also the size of the HE shows that larger enterprises have a better chance of accessing formal loans. Enterprises that possess asset have a better chance of access to formal loans than those who do not possess an asset.

Finally, the study estimated the significant determinants of accessing loans in the informal loans market by also using the Probit model. The results indicated that only two entrepreneurial

characteristics influences access to informal loans, which are gender and household size. This result indicated that male entrepreneurs have the advantage when it comes to accessing informal loans than their female counterparts. Also, the household size indicates that entrepreneurs from larger households have a better of accessing loans from the informal loans market. None of the enterprise features was significant.

On the other hand, age of the entrepreneur, marital status, education, diversification, sector of activity, base of operation, keeping financial records, holding a saving account and number of household workers have no significant relationship with access to total loans or either formal or informal loans. Also some new strategies for financing HEs were drawn based on descriptive statistics.

6.2 Conclusion

Some interesting outcomes emerged from this study, first, the majority (36.2%) of the HEs in Ghana indicated limited access to loans as the main challenge they face in addition to power and water supply problems. The study revealed that only about 15% of HEs do not need a loan. Also, about 67% of HE do apply for loans, but the 33% that do not apply most of them do need the loans but they do not apply for some reasons. Out of those who do not apply for loans, 55% do need the loans but do not apply for reasons such as high-interest rate, complex application procedures, lack of required guarantees and non-registration of the enterprise.

Also, it was noticed that most of the Ghanaian HEs rather prefer the informal loans market to the formal. The study showed that about 37% borrow from formal loan providers whereas 63% borrow from informal loan providers. The study indicated that the reason for this is the higher

level of loan accessibility rate in the informal (65%) compared to the formal (61%). The main sources of formal loans for HEs were banks and micro-credit institutions, and that of the informal were money lenders, trade credit (input suppliers or customers) and, relatives and friends.

Furthermore, the determinants of access to total loans by HEs in Ghana are entrepreneur's gender, household size, HE size and possession of assets by the HE. Also, the determinants of access to formal loans are entrepreneur's experience, HE age, HE size and possession of asset. In addition, the determinants of access to informal loans are entrepreneur's gender and household size. Finally, some new financing strategies were suggested.

6.3 Recommendation

To solve the problem of access to loans by HEs in Ghana effectively, all the stakeholders especially borrowers and lenders should be taken into consideration during the formulation of policies. Below are some recommendations based on the findings of this study.

First of all, access to loans by HEs in Ghana seems to favour male entrepreneurs. This is very problematic since over 62% of the HE sector is dominated by female entrepreneurs. The government should formulate policies and also establish agencies whose main aim is to give loans to female entrepreneurs in order for their HEs to move beyond survival to the place of growth and expansion.

In addition, the study shows that those with no or basic education dominate the HE sector in Ghana. Though they are quite constrained when it comes to formal loans, they at least have a chance in accessing informal loans. The government needs to embark on an educative campaign

to educated the people of Ghana on the opportunities available in this sector and make them know that the sector not financially constrain as they perceive. This is because of the high level of illiteracy in Ghana and they have no chance of acquiring a professional job. Also, financial institutions should organize financial training programmes for entrepreneurs to improve their chances of accessing loans.

Poor large households should be encouraged to start up a HE since they have the labour force and also since they have a better chance of accessing loans. In addition, already existing HE that have available extra labour due to the large size of the household should go ahead to employ more labour because it does not only increases their demand for loans but also increases their chances of accessing loans.

The study reveals that as HEs go beyond 5 years they stand a high risk of collapsing and the ones which need finances to survive also stand a lower chance of accessing loans from formal sources. They often cannot survive by the little the informal sector may grant them since the period of adulthood (6-10 years) is characterised by high expenditure to expand. The formal financial institutions owned by the government should give special loans to entrepreneurs whose enterprises are beyond 5 years and are at the brink of collapsing. These loans can be retrieved by the use of the government financial institutions since they will provide financial advice and monitor the operations and profitability of these HEs.

The government should provide periodical training and apprenticeship program for all individual with a desire to be entrepreneurs. This will equip them with the needed experience, in the form of efficient allocation of resources, before they start their own enterprise. This will better their

chances of accessing loans since most of the formal credit providers find trained and experienced entrepreneurs trustworthy.

Finally, all the new strategies for financing HEs indicated in this study should be pursued by the respective stakeholders. These strategies are the rebranding of the operations of HEs; education of entrepreneurs on bookkeeping and financial literacy; financial institutions going beyond only granting of loans to entrepreneurs; and government creating awareness concerning financial schemes available and providing an enabling environment for more HEs to operate.

6.4 Limitation of Study and Further Research Areas

The study only covered the HEs in the major cities of Ghana but did not consider those HEs in the rural area. Also, data on revenue which is a key variable to determining access to loans was not fully available from the data. Finally, the study also limited itself to only the demand side (entrepreneur and HE characteristics) of the factors that determinants of access to loans.

In the future, further research can be done by expanding the database to cover both urban and rural based enterprises. Also, future research should also consider both demand and supply side determinants of access to loans by HEs.

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APPENDIX

Table 1a: Logit Regression Estimates of Determinants of Total Loans Access

Dependent Variable: Total Loan Access

Variables	Coefficient	Marginal Effect	P-value
Age	0.0737	0.0167	0.169
Age Squared	-0.0009	-0.0002	0.127
Gender	0.6028	**0.1314*****	0.006
Marital Status	0.0253	0.0057	0.909
Household Size	0.0972	**0.0220****	0.018
Education	-0.2942	-0.0671	0.183
Diversification	0.3754	0.0800	0.408
Experience	0.0320	0.0072	0.209
Sector	-0.2820	-0.0641	0.195
Base of Operation	0.2269	0.0502	0.388
Financial Records	-0.1590	-0.0363	0.497
Savings Account	0.0126	0.0029	0.954
Household Workers	-0.1384	-0.0313	0.257
HE age	-0.0206	-0.0047	0.442
HE size	0.1742	**0.0394****	0.024
Asset	0.4596	**0.1009****	0.042
Con	-1.8818	-	-
Number of Observations = 489	Wald chi2 (16)= 36.97		Prob>chi 2= 0.0021
Pseudo R2= 0.0681		Log likelihood= -299.30268	

Note: ***, **, * significant at 1%, 5% and 10% respectively

Source: Author's compilation based on IFS (2013)

Table 2a: Logit Regression Estimates of Determinants of Formal and Informal Loans Access

Dependent Variable:	Formal Loan Access		Informal Loan Access	
Variables	**Marginal Effect**	**P-value**	**Marginal Effect**	**P-value**
Age	0.0017	0.926	0.0228	0.137
Age Squared	-0.00005	0.815	**-0.0003***	0.089
Gender	0.1165	0.180	**0.1541*****	0.009
Marital Status	-0.0229	0.791	0.0199	0.760
Household Size	0.0169	0.245	**0.0240****	0.059
Education	0.0136	0.878	-0.1023	0.113
Diversification	0.2052	0.214	0.0620	0.578
Experience	**0.0250***	0.089	0.0008	0.892
Sector	-0.0675	0.437	-0.0336	0.586
Base of Operation	0.1308	0.178	-0.0159	0.833
Financial Records	-0.1278	0.175	0.0060	0.928
Savings Account	-0.0843	0.338	0.0518	0.395
Household Workers	-0.0478	0.412	-0.0393	0.223
HE age	**-0.0275***	0.050	0.0091	0.163
HE size	**0.0618***	0.051	0.0385	0.105
Asset	**0.1402***	0.093	0.0747	0.240
	Number of Observations = 179		Number of Observations = 310	
	Wald chi2 (16) = 21.34		Wald chi2 (16) = 28.75	
	Prob>chi2 = 0.1659		Prob>chi2 = 0.0256	
	Pseudo R2 = 0.0996		Pseudo R2 = 0.0971	
	Log likelihood = -107.85987		Log likelihood = -181.48945	

Note: ***, **, * significant at 1%, 5% and 10% respectively

Source: Author's compilation based on IFS (2013)

Table 3a: Heckman Probit Regression Estimates of Determinants of Access to Loans

Dependent Variable:		Loan Access		Loan Demand	
Variables	**Marginal Effect**	**Coefficient**	**P-value**	**Coefficient**	**P-value**
Age	0.0153	0.0466	0.176	-0.0195	0.502
Age Squared	-0.0002	-0.0006	0.143	0.0003	0.381
Gender	**0.1217**	**0.3693*****	0.009	-0.1329	0.228
Marital Status	-0.0039	-0.0118	0.951	**0.2384****	0.034
Household Size	**0.0184**	**0.0560****	0.040	0.0070	0.709
Education	-0.0520	-0.1577	0.317	-0.0766	0.493
Diversification	0.0685	0.2078	0.502	0.1063	0.670
Experience	0.0059	0.0179	0.355	0.0159	0.214
Sector	-0.0376	-0.1140	0.725	**-0.4685*****	0.000
Base of Operation	0.0402	0.1220	0.462	0.0177	0.896
Financial Records	-0.0258	-0.0783	0.673	-0.1832	0.115
Savings Account	-0.0021	-0.0064	0.965	0.1804	0.121
Household Workers	-0.0240	-0.0728	0.328	-0.0018	0.975
HE age	-0.0040	-0.0122	0.476	-0.0066	0.608
HE size	**0.0340**	**0.1033****	0.024	0.0096	0.709
Asset	0.1164	0.3533	0.316	**-0.5837*****	0.000
Future Expansion	-	-	-	**-0.4240*****	0.000
Con		-1.0683	-	1.1765	-

Rho (ρ) = -0.2441

LR test of independent equations (rho = 0) : chi2(1) = 0.03 Prob>chi2 = 0.8523

Number of observations = 729	Censored observations = 240	Uncensored observations = 489
Wald chi2 (16) = 40.18	Prob > chi2 = 0.0007	Log likelihood = -710.8161

Note: ***, **, * significant at 1%, 5% and 10% respectively

Source: Author's compilation based on IFS (2013)