UNIVERSITY OF CAPE COAST

EXPLORATION OF RISK PERCEPTION AMONG FINANCIAL SERVICE PROVIDERS IN FINANCING SMALL AND MEDIUM SCALE ENTERPRISES IN THE SUNYANI MUNICIPALITY, GHANA

BY

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DECLARATION

Candidate's Declaration

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

Candidate's Signature …… Date ……..

Name: ……

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature …… Date ……..

Name: ……

Co-Supervisor's Signature …… Date ……..

Name: ……..

ABSTRACT

Spurred in by the phenomena of opacity and riskiness of financing small and medium-sized enterprises (SMEs) worldwide, numerous investigations have been conducted to provide explanations to financial service providers' risk perceptions, lending practices and procedures. The risk compensation theory and the principal-agent theory provide a theoretical framework of most of the studies in risk perception. Using the positivist and the interpretivist paradigm as well as the cross-sectional design, the study specifically explored the types of risk and risk perception in formal and informal financial institutions, examined the determinants of risk, and ascertained the SMEs characteristics and credit risk. Questionnaires and interview schedules were used to collect data from 64 randomly selected credit officials and 217 SME operators and managers. In-depth interviews were conducted with some bank managers. The data were analysed by using descriptive statistics like mean, standard deviation, frequencies and logistic regression in the first stage, while Pearson product-moment correlation coefficient and Chi-square test of independence was used in the second stage. In-depth interviews were analysed using narratives techniques. From the results, credit policies, interest rates, inflation rates, monitoring, time of loan disbursement and banks regular visits significantly influenced credit risk perception. Appraisal of loans, governance and management control, screening and monitoring, credit assessment and government interference had no significant influence on credit risk perception. It was recommended that financial service providers should provide financial literacy to SMEs through training and workshops on how to invest the full loan amount in the intended project and also review interest rates regularly to commensurate with prevailing market conditions.

KEYWORDS

Adverse selection

Credit risk

Information assymetry

Moral hazard

Risk perception

Small and medium-sized enterprises

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DEDICATION

To my wife Gloria Tachie-Donkor who continuously supported me in my academic endeavours, as well as my children.

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LIST OF ABBREVIATIONS

BIS	Bank for International Settlement
BoG	Bank of Ghana
CAMPARI	Character, Ability, Margin, Purpose, Amount, Repayment and Insurance
CSO	Central Statistics Office
EU	European Union
GDP	Gross Domestic Product
GEDC	Ghana Enterprise Development Commission
GSS	Ghana Statistical Service
IFC	International Financial Corporation
IMF	International Monetary Fund
MoFEP	Ministry of Finance and Economic Planning
NBSSI	National Board for Small Scale Industries
OECD	Organization for Economic Co-operation and Development
PLR	Prime Lending Rate
SMA	Sunyani Municipal Assembly
SMEs	Small and Medium Sized Enterprises
UNCTAD	United Nations Conference on Trade and Development
USA	United States of America
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

Background to the Study

Risk has been the subject of considerable research interest in the banking and financial sectors, and has recently drawn the attention of policymakers, government and statistical researchers in both developed and developing economies. Several studies have indicated that risk should not be viewed as intrinsically bad, because every opportunity for an entrepreneur comes with some degree of risk. This view is supported by Giordano-Martínez, Herrero-Crespo and Fernández-Laviada (2017) that risk is implicit in entrepreneurship, whether is about creating a new market, identifying an opportunity or starting up a business since entrepreneurial behaviour encompasses a series of expected results that cannot be attained, which implies the probability of failure.

In a related argument, Stroeder (2008) argues that every business decision and entrepreneurial act is connected with risk. Wachinger and Renn (2010) ask a pertinent question about how risk is perceived. The answer to the question is that knowledge accumulated, experience gained over the years, values, attitudes, and feelings serve as a proxy for assessment and judgment by institutions about the seriousness and acceptability of risks. According to Rohrmann (2008), every human being is occupied with risk perception most of the time, whether driving a car or thinking about residence safety or worrying about fires in an environment. With respect to credit delivery, financial providers are occupied with risk

perception and are a major source of concern in the decision to lend among financial service providers.

According to Tumay (2009), risk perception is described as the situation where a person anticipates, visualises and takes precautionary measures to deal with the problem of moral hazards and adverse selection. Similarly, Sindhu and Kumar (2014) state that risk perception refers to the way in which financiers or investors visualise the risk of financial assets, based on their concerns and experience. Financial service providers are profit-seekers who channel financial resources from the surplus units to deficit units. They operate under the objectives of profit maximisation through appropriate risk management strategy (Hull, 2012; Sinkey, 1992). In performing financial intermediation role, financial service providers are exposed to a variety of risks. Bank for International Settlement (2005) and Oliyide (2012) categorize risk into interest rate risk, foreign exchange risk, political risk, market risk, liquidity risk, operational risk and credit risk.

However, among the risks faced, credit risk is identified as the most significant risk that affects the profitability and sustainability of financial institutions (Afriyie & Akotey, 2012; Kolapo, Ayeni & Oke, 2012). Several studies have revealed that the high-risk perception in financing has created a finance gap for small and medium enterprises and due to that financial providers are averse in supplying credit to SMEs in both developed and developing economies (International Financial Corporation, 2013; UNCTAD, 2002).

A study by the International Financial Corporation (2013) notes that micro, small, and medium enterprises in developing countries face an estimated financing

gap of $2.1 to $2.6 trillion, which is equivalent to 30 to 36 percent of current outstanding SME credit. The main argument pertaining to the financing gap of SMEs centres on the deficiencies in the supply of finance to SMEs. The supply-side argument contends that providers of finance are reluctant to lend to SMEs because of higher transaction cost, information asymmetry, and higher risk perception as compared to larger businesses (International Financial Corporation, 2009; Mensah, 2004; Tagoe, Nyarko & Anuwa-Armah, 2005). For that reason, financial service providers are compelled to compensate or offset themselves by charging a high-risk premium to SMEs.

The theory of risk compensation or risk homoeostasis postulates that financial service providers charge a high-risk premium to compensate them for undertaking risks of lending to SMEs (De la Torre, Martinez Peria & Schmukler, 2009; IFC, 2009; Sinkey, 1992; Tagoe et al., 2005). The theory further stipulates that financial service providers typically offset the risks of lending to SMEs by requesting or applying greater collateral requirements and charging higher interest rates (International Financial Corporation, 2009). Therefore, the high-risk premium requested by financial service providers is the cause of the finance gap and has serious implications for the growth of SMEs, as explained by the principal-agent theory. The agency problem, according to Organization for Economic Co-operation and Development (2013), is severe in developing economies and a major concern to principals in their credit delivery.

The theory suggests that given the chance, agents will behave in a self-interested manner, behaviour that may conflict with the principal's interest

(Eisenhardt, 1989; Jensen & Meckling, 1976). As such, principals will enact structural mechanisms that monitor the agent in order to curb the opportunistic behaviour and better align the parties' interests. Elucidating further, the theory stipulates that because principals are not able to verify the actions and intents of the agents due to information asymmetry, agents are eliminated in the stream of potential borrowers because of high-interest rates (Mensah, 2004; Mutezo, 2013; Spreman, 1987). However, Hansen, Kimeria, Ndirangu, Oshry and Wendle (2012) believe that the high interest rates imposed by financial providers appears rational, given the expected inflation and high historical default rates of SME borrowers.

The philosophical insight into the study of risk perception, according to Renn (2008), reveals that the expected risk inherent in lending among financial service providers emanates from two philosophical perspectives, namely; realist approach and the constructivist approach. Wachinger and Renn (2010) believe that the occurrence of risk is independent of institutions. Slovic and Weber (2002) argue that risks do not exist out there, but that risk perception is seen as a concept that human beings including financial service providers have invented to help them understand and cope with the dangers and uncertainties of lending. The constructivist's perspective, according to Ricciardi (2007), assumes that there is no objective reality of risk, but rather, risks inherent in any given phenomena, are subjective and socially constructed based on factors such as trust, fairness, beliefs, attitudes, feelings, and democratic values.

According to Sindhu and Kumar (2014), risk perception is very relevant in financial decisions, considering the uncertainties that are associated with the

investments of funds. A Bank of Ghana (2016) report in Ghana shows the increasing spate of non-performing loans in financial service provider's loan portfolio and the need to deal with non-performing loans and high default rates of SMEs. Risk perception helps institutions to transform risky ventures when the sources of such risk are determined. For instance, studies by Afriyie and Akoto (2010), Breuer, Jandacka, Rheinberger and Summer (2010) and Nijskens and Wagner (2011) indicate poor governance and management control, inappropriate laws, limited institutional capacity, inappropriate credit policies and weak appraisal of loans as determinants of risk.

Abor (2017) believes that the strategies in dealing with the problem of adverse selection and moral hazards are entrenched in the risk management process. The risk management process includes risk identification, risk assessment, risk analysis and monitoring. The perception of the risk involved in lending to small enterprises by informal lenders varies considerably (Aryeetey, 2005; Coleman, 2000). A study by Pham and Lensik (2007) indicates that major differences between formal and informal financial service providers are the mechanisms used for dealing with the screening, incentives and monitoring problems with the informal sector relying much more heavily than the formal sector on their intimate knowledge of their clients to overcome these problems. In screening, borrower's characteristics such as age, the size of the firm, collateral, gender, educational attainment serve as a proxy for financial decisions.

A study by Mensah (2004) shows several interventions by the Government of Ghana and the private sector to address SMEs ability to access finance. This has

accounted for the high numbers of financial service providers in the Sunyani Municipality. Financial service providers in the municipality include commercial banks and development banks, rural banks, savings and loan companies, co-operative credit unions, 'susu' collectors (GSS, 2014; Mofep Budget SMA, 2015).

The SMEs that these financial providers deal with include those in agro-processing, animal farming, sawmilling and wood processing, retailing, catering, hairdressing, dressmaking, and mining (Ghana Statistical Service, 2014; Sutton & Kpentey, 2012). Equally important, Prempeh (2015) confirms that only a few financial service providers have developed an explicit policy for SME target groups taking the particular requirements and needs into consideration, and plan appropriate credit risk management systems in the Sunyani Municipality.

Statement of the Problem

Finance is key for the growth and the survival of small and medium-sized enterprises (UNCTAD, 2002). Also, Biswas (2015) believes that funding is considered the lifeblood of every enterprise whether large or small. In Ghana, Abor and Biekpe (2007) indicated that financing small and medium-sized enterprises are challenged with high risk and informational opacity. Spurred in by incidence of tightened monetary conditions imposed by the Bank of Ghana, non-performing loans of SMEs (BOG, 2016; IMF, 2013), as well as sluggish growth in availability of funds, low capital adequacy ratio, large loans and advances has led to the problem of moral hazard and adverse selection (BOG, 2018).

The high-risk perception embedded in credit delivery, according to Bawumia, Belnye and Ofori (2005), is the reason why financial service providers charge a high-interest rate. There are a number of formal, semi-formal and informal support institutions established to provide financial support to SMEs and Sunyani Municipality is no exception. A number of surveys (Bank of Ghana, 2009; Kanyanula & Quartey, 2000; Mensah, 2004; Prempeh, 2015; Tagoe et al., 2005) indicate that financial service providers are averse to lending to SMEs because of the high-risk perception of such lending, information asymmetry, and high transactional cost.

Among the high-risk perception faced, credit risk is perhaps most significant of all risks in terms of the size of potential losses to financial service providers in the Sunyani Municipality (Mensah, 2012; Prempeh, 2015). Credit risk is also linked with other risks likely to affect the activities of financial service providers in the Sunyani Municipality. Those risks include interest rate risk, reputational risk, legislative risk, foreign exchange risk and operational risk

Addai-Korankye (2014) believes that the largest and most obvious and critical source of credit risk for most financial service providers in Sunyani Municipality and Ghana at large are loans and advances leading to the problem of moral hazards and adverse selection. Additionally, other sources of credit risk are weak appraisal of loans, weak governance and management control, inadequate capital level and unstable liquidity status, laxity in credit assessment and high interest rates. Significant statistics from financial stability report of Bank of Ghana (2016) and IMF Ghana (2013) indicate the increasing spate of non-performing

loans of SMEs. According to Ghana Statistical Service (2014), the lack of sufficient market credibility of the SME sector makes it difficult for lenders to assess risk premiums, creating differences in the perceived versus real risk profiles of SMEs.

The Sunyani Municipality harbours a number of small and medium scale enterprises. At the same time, the Municipality has a number of financial service providers, varying from commercial and investment banks, rural banks, savings and loans companies, micro-finance banks to ‘susu' organisations and professional moneylenders (GSS, 2014). Studies by Awuah, Addaney and Afriyie (2016) and Nyarko, Asani and Darkwah (2014) report that formal lenders, especially micro-finance institutions in the Sunyani Municipality perceive SMEs borrowers to be too risky compared to informal lenders. This risk expectation is reflected in the high-risk premiums charged by financial service providers and the collateralizations of loans.

Additionally, empirical evidence according to Beck et al . (2008) indicate that several research studies have investigated the risk perception among financial service providers in developed economies and there are few studies paying close attention to risk perception among financial service providers in financing SMEs in the developing economies of which Ghana is no exception. In this regard, the researcher confirms that exploring the risk perception among financial service providers in financing SMEs in the Sunyani Municipality would help throw more light on the problem at hand.

Objectives of the Study

The main objective of the study was to explore the risk perception among financial service providers in financing small and medium-scale enterprises in the Sunyani Municipality of Brong-Ahafo Region. Specifically, the study sought to;

1. Explore the types of risks and risk perception faced by financial service providers in the formal and informal financial institutions in the Sunyani Municipality.
2. Examine the determinants of perceived credit risk among financial service providers in financing small and medium-sized enterprises.
3. Determine the relationship that exists between SMEs characteristics and credit risk.
4. Make recommendations to promote financial inclusion in SME financing.

Research Questions

The study was guided by the following research question for objective one.

1. What are the types of risks and risk perception faced by financial service providers in the formal and informal financial institutions?

Research Hypothesis

In order to achieve objectives two and three, the following research hypotheses were formulated.

H_0: Appraisal of loans, management control, credit assessment, interest rate, credit policies, government interference, banks regular visits and financial incentives

do not contribute significantly toward credit risk among financial service providers.

H_1: Appraisal of loans, management control, credit assessment, interest rate, credit policies, bank regular visits and financial incentives contribute significantly toward credit risk among financial service providers.

H_0: There is no significant relationship between SMEs characteristics (Age of firm, the size of the firm, the gender of the owner of SME, collateral, and educational status of the owner), and credit risk.

H_1: There is a significant relationship between SMEs characteristics (Age of firm, the size of the firm, the gender of the owner, collateral, educational status of the owner), and credit risk.

Significance of the Study

The influence of risk perception among financial service providers on SMEs has received limited attention in developing countries and no attention in the Ghanaian context. Therefore, a study of these relationships will have valuable implications for economic development, policy formulation, and programme development in both the financial and SME sectors in Ghana. The findings would be of interest to the government, policymakers, and researchers. Future researchers and scholars will find this study important in facilitating an increase in the general knowledge of the subject and also act as a reference material to those who may want to embark on related studies. Furthermore, the outcome will help contribute to academic discussions on credit risk inherent in SMEs.

Scope of the Study

The Sunyani Municipality is one of the twenty-seven (27) districts in the Brong-Ahafo Region and its capital is Sunyani. A significant statistic from the Sunyani Municipal Assembly indicates that the Municipality has about 141 credit administrators in the formal and informal financial institutions and 510 Small and medium enterprises (SMEs). The study covered registered financial service providers mainly due to time constraints as well as some registered and unregistered SMEs in the Municipality. The study was also limited to credit officers in the formal and informal financial institutions as well as managers or owners of SMEs operating in retailing, wood processing and sawmilling, metal works, dressmaking, catering and hospitality, printing works and hairdressing businesses.

For the purpose of the study, perception, opinions, beliefs, attitudes and ideologies were viewed in relation to financing SMEs as a predictor of risk perception in financing. The boundaries of risk perception were limited to opinions, beliefs, attitudes, ideologies and feelings of financial service providers. In addition, the socio-demographic characteristics of respondents were analysed as well as the key research objectives, namely, types of risk, determinants of risk, risk perception in formal and informal financial institutions and SME owner-manager attributes and credit risk as well as credit risk management were established.

Definition of Terms

For the purpose of the study, the following terms were used as defined below:

Risks: The term risks in financial institutions are the uncertainties resulting in adverse variations of profitability or in losses

Perception: Perception can be defined as the procedure by which an individual is in search of pre-eminent interpretation of sensory information so that the individual can make a final judgment based on their level of expertise and experience

Risk Perception: Risk perception involves people's beliefs, attitudes, judgments and feelings, as well as the wider social or cultural values and dispositions. Risk perception is an idiosyncratic process of interpretation, a process of making sense of a complex world in order to plan, choose and act in that world.

The term risk perception in context of finance is described as the situation where a person anticipates, visualises and takes precautionary measures to deal with the problem of moral hazards and adverse selection.

Credit Risk: This referred to the possibility or potential of financial loss resulting from the failure of debtors for any reasons to fully honour their financial obligations to the lending institution.

Small Scale Enterprise: Small scale enterprise constitute a business entity with an employee size of less than 10

Medium Scale Enterprise: Medium-scale enterprise constitutes firms with employees between 10 and 100

Informal Financial Service Providers**:** Informal lenders typically comprises private individuals, professional moneylenders, traders, commission agents, landlords, friends and relatives who lend money generally out of their own

equity and are not regulated or supervised by the national monetary authorities

Formal Financial Service Providers: Formal finance is borrowing from financial institutions such as banks and credit unions, and other non-financial institutions subject to state supervision and regulation

Credit Scoring**:** Credit-scoring rule involves attaching heavy statistical weights to the financial conditions and history of the principal owner, given that the credit-worthiness of the owner

Information Asymmetry: Information asymmetry arises because lenders are imperfectly informed about the characteristics of potential borrowers, which may be impossible for lenders to distinguish good borrowers from bad ones

Moral Hazard: Moral hazard is the risk that one party to a contract can change their behaviour to the detriment of the other party once the contract has been concluded

Adverse Selection: This is where financial service providers use interest rates as a screening device for distinguishing bad risks from good risks and as a result, high risk borrowers are willing to pay a higher interest rate for a loan leading to a decline in the expected profit of the bank due to the adverse selection effect

Credit Rationing: Credit rationing occurs when loan demand exceeds supply, and some borrowers receive no or less the amount of credit applied for at prevailing market rates

Organisation of the Study

The study was organised into five chapters. Chapter One introduces the study by giving the background information, the statement of the problem, the purpose of the study, objectives of the study, research questions, research hypothesis, scope of the study, the organisation of the study and the significance of the study. Chapter Two deals with the literature review. This section reviewed literature under the following themes; concepts of risk perception; definition of credit risk; lending risk associated with small and medium enterprises; credit risk management strategies; measurement of credit risk and definition of small and medium enterprises. The remaining part of Chapter Two proceeds as follows: characteristics of small and medium enterprise; firm characteristics and credit risk; theoretical review on risk perception; and empirical review of credit risk and small and medium-sized enterprises financing.

Chapter Three highlighted the methodology which covers the study area, research design, population, sample and sampling technique, the source of data, data collection procedure, instrumentation, and mode of the data analysis. Chapter Four emphasized on the presentation of data collected from the field and their analysis as well as discussions. The final chapter focused on the summary of the findings, conclusions and recommendations as well as the study's contribution to knowledge.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Introduction

According to Creswell (2013), a literature review is a carefully drafted summary of the theories and recent studies conducted on a topic that includes the key findings and the methods that researchers used while making sure to document sources. Literature review enables a researcher to place the research questions in the context of relevant previous work done in the area, and also to explain and justify the research design as well as the procedure adopted for the study (Kothari, 2004; Maxwell, 2012). Literature for this study was reviewed under the following themes: theoretical review of risk perception, concepts of risk perception and definition of credit risk and lending risk associated with small and medium enterprises. The other themes include credit risk management strategies, definition and characteristics of SMEs, firm characteristics and credit risk as well as empirical review on risk perception and SME financing.

Theoretical Review of Risk Perception

Three major theories have been proposed in the literature to explain the risk perception of financing SMEs: the risk compensation theory, credit rationing theory and the principal-agent theory. The section examines the application of these theories to financial providers and SMEs that this study investigates.

Risk Compensation Theory

Lave and Weber (1970) and Peltzman (1975), originally, proposed the idea of risk compensation in response to a technological approach to safety (Levy & Miller, 2000). Risk compensation theory postulates that an individual, group of people or institutions tend to take more risks when they feel a greater sense of security. By so doing, institutions adjust their level of risk-taking behaviour in response to the perceived level of risk, depending on the safety measures that are instituted, as a result, becoming more careful when sensing greater risks and less careful if they feel more protected (Dolan & Lindsey, 1994; Slovic, 2016; Wilde, 1982).

The theory indicates that financial service providers typically offset the risks of lending to SMEs by requesting or applying greater collateral requirements and charging higher interest rates (Bawumia, Belnye & Ofori, 2005; International Financial Corporation, 2009; Kwambai & Wandera, 2013). Risk compensation theory stipulates that people maximise their benefits by comparing the expected costs and benefits of safer and riskier behaviour. Wilde (1982) proposed four components to a person's calculations relating to risk. These include expected benefits of risky behaviour, expected cost of risky behaviour, expected benefits of safe behaviour, and expected cost of safe behaviour.

Risk compensation theory has been validated in the transport and sports sector and can be applied in the financial sector (Leym & Miller, 2000). International Financial Corporation (2012) indicates that financial service providers aim at receiving the highest possible returns from their investment of funds to

SMEs. Therefore, in financial providers' credit delivery they compare the cost associated with the borrowed funds to the expected benefit of the funds to make an informed decision to choose loan applicants or reject loan applicants based on their creditworthiness (OECD, 2013). This compels financial providers to ration credit to SMEs.

Credit Rationing Theory

The credit rationing theory, propounded by Stiglitz and Weiss (1981) also, provides a framework for analysing the risk perception among financial service providers in financing SMEs and as such, rationing credit to borrowers. Credit rationing occurs when there is a gap between the amount the lender is willing to offer, and what they are able to offer. Credit rationing theories are based on informational asymmetries between lenders and borrowers and transaction costs of information search and monitoring. Gichuki, Njeru and Tirimba (2012) believe that the availability of information in the decision to lend is important because it enables the financial service provider to evaluate the risk-return profile of the loan application and set the level and terms of credit to be extended to the borrower.

The credit rationing theory stresses that information asymmetry is the main cause of financial market malfunctioning in developing countries of which Ghana is no exception (Ahiawodzi & Sackey, 2013). Financial service providers that advance loans to economic agents are not only interested in the interest they receive on loans but also the risks of such loans. In a related argument, McKinnon (2010) believes that when interest rate is liberalised, financial markets will allocate credit

based on interest rates that reflect scarcities. However, Boahene, Dasah and Agyei (2012) argue that interest rates cannot function as an allocator of credit because borrowers with high risk may be considered rather than those with potential good businesses with lower risk.

Information asymmetries are of three aspects namely; adverse selection moral hazard and principal-agent theory. According to Maziku (2012), full information about the borrower's project may not always be available. This leads to a situation of information asymmetry, which occurs when one party to the lending transaction has more or better information than the other (Mishkin & Eakins, 2012). Previous studies by, Kithinji (2010) and Mensah (2004) established that for a lender to be able to make a sound decision requires adequate information about the borrowers' financial situation, ownership of assets and liabilities as well as character indicators that would give the borrower the confidence that the loan would be repaid.

Information asymmetry between SME borrowers and the financial service providers is reflected in the inability of the majority of SMEs to provide up to date reliable financial information and realistic business plans (Batten & Hettihewa, 1999; Berger & Udell, 1995). Similarly, Hutchinson and Xavier (2006) assert that because funding institutions do not have full information about the SMEs activities and the viability of their projects, they cannot make knowledgeable decisions on their loan applications.

However, Mutezo (2013) believes that SMEs most often than not conceal the unfavourable information from the lender when they are applying for loans. In

furtherance of that, there is therefore the decision of risk on the part of the lender to avoid or reduce the perceived risk, the lender would reject the loan application or ration the credit value. This situation is referred to as adverse selection. Helsen and Chmelar (2014) argue that lenders persistent demand for collateral for loans result in the problem of adverse selection and credit rationing. Stiglitz and Weiss (1981) emphasize that low-risk borrowers, who experience a lower rate of return on their project due to the unstable macro-economic environment on the average, become less wealthy than high-risk borrowers. As a result, they are unable to provide more collateral for extra loans.

Moral hazard, on the other hand, refers to a situation where the borrower takes an action that adversely affects the returns of the lender (Fhima & Bouabidi, 2011). This form of information asymmetry occurs if the parties involved have diverging interests and the action taken by the agent cannot be monitored accurately by the principal (OECD, 2013). A borrower may, for example, be tempted to exert less effort or to secretly switch to riskier projects in order to increase his return (Armendáriz & Morduch, 2010; OECD, 2003).

Mensah (2004) point out that the lender may have no means of verifying whether the borrower actually used the funds for the declared intentions. Because of a higher probability of default, the returns to the financial service provider will be reduced. Rajan (2006) believes that financial service providers can resort to two methods to reduce moral hazards; through the promise of renewed credit in the future and by imposing penalties on borrowers for low effort levels. Previous studies of Owusu-Antwi and Antwi (2010) have reported that the problem of moral

hazard is intense in Ghana when after the loan is granted to the borrower, the loan beneficiary may divert the fund in activities not expected or known to the lender, which may invariably result in failure to repay the loan as per the loan contract.

Following the argument above, Mensah (2004) states that when the lender is unable to monitor the borrower's behaviour, the lender's funds are at risk since the risk of default increases. Due to this assertion, low-risk borrowers such as SMEs are being sidelined or even excluded from the stream of potential borrowers (Mutezo, 2013). From adverse selection, it is observed that the defaults associated with the SMEs borrowers arise involuntarily as a result of adverse income or wealth shocks that make borrowers unable to repay their loans (Bessis, 2011).

Moral hazard, in contrast, stress the problems with contract enforcement that compels borrowers not to repay their loans even if they have the means to do so. Basically, moral hazards focus on voluntary default risk and its associated borrower incentives (Mishkin & Eakins, 2012). Adverse selection, according to Stiglitz and Weiss (1981), is based on the assumption that lenders cannot distinguish between borrowers of different degrees of risk and that loan contracts are subject to limited liability and so if project returns do not commensurate to the debt obligations, the borrower neglects the responsibility to pay out of pocket. Hence, adverse selection assumes that borrowers repay loans when they have the means to do so (Jia, Heidhues & Zeller, 2010).

According to Pausch (2005), the theory of credit rationing has been criticized for its basic assumption that lenders are not aware of borrower characteristics. Pal (2015) states that the close-knit nature of many traditional rural

societies indicate that lenders possess a great deal of information about relevant borrower characteristics such as farming ability, size and quality of landholdings, cropping patterns, and risk attitudes. Stigilitz and Weiss (1981) point out that in lenders' quest to reduce information asymmetry, collaterals are demanded and so borrowers who have greater wealth to put up as collateral obtain cheaper credit, have incentives to work harder, and earn more income as a result. Incidentally, Kwambai and Wandera (2013) observed that asset disparities associated with borrowers is the main cause of information asymmetry and this situation may lead to poverty.

In reducing information asymmetry, some theoretical models have been propounded to capture the empirical implications of asymmetric information. These models include capital rationing model, postulated by Stiglitz and Weiss (1981), signalling model by Bester (1985), and sorting by the signal and self-selection paradigm (Han, Fraser & Storey, 2009). Hauswald and Marquez (2003) also note that sorting by the signal and self-selection paradigm occurs because financial service providers are generally assumed to have less good information about the individual small businesses than the borrower does. Jimenez and Saurina (2004) observed that information asymmetry can be reduced by financial service providers requesting borrowers to provide collaterals in the event of a default.

Han, Fraser and Storey (2008) state that sorting-by-observed-risk (SBOR) is a mechanism used to reduce information asymmetry by which collateral is required by the lender. Han, Fraser and Storey (2009) as well as Shiller (2013) report that information asymmetry is reduced when good borrowers reliably reveal

themselves and one reliable signal may be the borrower offering collateral and this effort is rewarded with a good contract by the financial service provider. This is termed sorting-by-private-information (SBPI), by which collateral is offered by the borrower. Undoubtedly, Berger and Udell's (1990) empirical work supports the SBOR paradigm, implying that clearly, risky small firms are required to pledge collateral (Han et al., 2009).

Berger and Udell (2002) assert that financial service providers may alleviate information asymmetries by collecting private information about borrowers to aid their lending decisions. These transactions in the form of relationship banking would reduce information asymmetries and lower the costs of lending for financial institutions (Dela Torre, Peria & Schmukler, 2010). Through the services and products used by small business borrowers, financial service providers can collect information, which is not directly available, for example, from financial statements (Claessens, 2006; Cole & Wolken, 1995).

In summary, the credit rationing theory stresses that information asymmetry is the cause of market imperfections between principals including financial service providers and agents such as SMEs management. The principal-agent theory was developed as an alternative theory capable of explaining the difficulties in the contract agreement between firms and financial providers.

Principal-Agent Theory

The principal-agent theory has its origin in the new economics of organisation. The theory is a theoretical construct introduced by Jensen and

Meckling (1976), to examine relations within the firm (Moe, 1984). The theory became the central framework for examining the difficulties that arise from contracting in any setting (Gauld, 2007). The theory rests on two basic assumptions. Foremost, agents including SMEs management and principals including financial providers have contradicting interests. The principal's interest is a return on investment, while the agent is motivated by private and economic benefits. However, principals are not able to verify the action of the agent because of information asymmetry (Spremann, 1987). The risk that the entrepreneur acts in his own best interest instead of the interest of the investor is recognised as the agency problem.

Mensah (2004) believes that once funds are granted to an entrepreneur, he/she may divert the funds in ways other than those for which it was intended. A study by Organization for Economic Co-operation and Development (2015) indicates that an entrepreneur might undertake excessively risky projects since all of the benefits of the project belong to the entrepreneur while a lender would prefer a less risky operation even if profitability were less than the riskier alternative. Gauld (2007) noted that the agency theory is concerned with how the agency affects the form of the contract and the way they are minimised, particularly when contracting parties are asymmetrically informed.

Hame (2014) articulates that the problem of information asymmetry arises because lenders are imperfectly informed about the characteristics of potential borrowers which may be impossible for lenders to distinguish good borrowers from bad ones. Principals have all it takes to determine who good borrowers and bad

borrowers are by conducting a thorough investigation on borrowers to avoid risky loans. Previous studies by Fraser (2004), Peterson and Rajan (1994) have reported that longer and broader relationships increase the amount and flow of information to lenders, enabling good borrowers to obtain better access to finance over time. Therefore, information asymmetries lead to sub-optimal flows of finance available to smaller firms compared to larger firms (Cook, 2001).

Following the theories discussed above, it stands to reason that examining risk and the risk perception in SMEs financing would be more valuable and ideal in determining its impact on financial service providers' sustainability and profitability in the financial market. Consequently, the concepts of risk, perception and risk perception are reviewed in the ensuing sections.

Risk

Risk has been discussed in various ways by a number of scholars. Sindhu and Kumar (2014) indicate that risk is an inherent feature of all types of financial investments. Several writers have defined risk as the probability that the actual return on an investment will be lower than the expected return. According to Gallati (2003), risk refers to a condition in which there exists an exposure to adversity or a condition in which there exists a possibility of deviation from the desired outcome that is expected or hoped for. Bessis (2011) asserts that risks in financial institutions are the uncertainties resulting in adverse variations of profitability or in losses. Machiraju (2008) and Schroeck (2002) state that risk is based on real world events, including a mixture of conditions in the external environment.

In another study, Jonkman, Van Gelder and Vrijling (2003) emphasize that risk is the loss or injury caused to a person due to an activity. These authors underscore that risk is the product of a hazard and as such considered it as a situation that can lead to harm and vulnerability. Risk is perceived to permeate all human actions to different degrees and all kinds of business as well as every area of management of an institution. According to the British Bankers' Association (2006), the concept of risk encompasses positive and negative consequences of an event, which may affect the realisation of the strategic, operational and financial objectives of an enterprise. Verbano and Venturini (2013) assert that due to the difficulty and the magnitude of the risks that businesses face, scholars have identified a macro classification of risks into two main categories. These are pure risk and speculative risk.

Similarly, Rejda (2011) assert that banking risks are classified into pure risks and speculative risks. Vaughan and Vaughan (2007) assert that the first classification of risk is known as pure or static risk and is concerned with the risk that only causes damage without the chance of earning from its occurrence. The outcome of this risk is always adverse and is typically unanticipated because it is determined by unplanned events. This category of risk falls perfectly under the insurance policy (Verbano & Venturini, 2013). However, the speculative or dynamic risk is the risk that can cause either damage or earn opportunities (Knight, 2012). These are the typical entrepreneurial risks, and some implications of such risk, for example, include an investment that has not generated a profit. They are

normally related to planning and management of different businesses as well as functions of an enterprise such as production, product, marketing and sales.

A recent study by Adeleke et al. (2019) emphasize that risky events can arise as a result of external factors including economic, environmental, social, political, and technological aspects or internal factors which comprise infrastructure, human resources, process and technology used by a company. Risks faced by financial institutions are generally classified into seven categories; credit risk, market risk, interest risk, liquidity risk, operational risk, legislative risk, and reputation risk (Basel 2 Accord, 2006; Oliyide, 2012). It is important to note that although these categories of risk are distinct, they are nonetheless interrelated and overlap with each other. From the studies, it is believed that risk occurs when adverse or unpleasant situation affects the realisation of objectives.

Perception

Perception is the basic form of cognitive contact with the world around us (Efron, 1969;Ungerer & Schmid, 2013). Lindsay and Norman (2013) argue that perception is closely related to attitude and is the process by which organisms interpret and organise sensation to produce a meaningful experience of the world. Perception has its root from the latin word ‘perceptio’ which implies the organisation, identification and interpretation of sensory information in order to represent and understand the environment (Fuliang & Mushangwe, 2015). Similarly, Sindhu and Kumar (2014) indicate that perception is the procedure by which an individual is in search of pre-eminent interpretation of sensory

information so that the individual can make a final judgment based on their level of expertise and experience. Perception depends on the human mind and it considers objects in their entirety.

Risk Perception

Perception of risk, according to Sjoberg, Moen and Rundmo (2004), goes beyond the individual, and that it is a social and cultural construct reflecting values, symbols, history and ideology. Hamid, Rangel, Taib and Thurasamy (2013) describe risk perception as a subjective appraisal of the riskiness of a contemplated action. People's judgments and evaluations of hazards that our facilities, environments or institutions might be exposed to are called risk perception. Renn (2008) articulates that risk perceptions are interpretations of the world, based on experiences or beliefs. Risk perception is rooted in the norms, value systems and cultural idiosyncrasies of societies (Finucane & Holup 2006; French et al. 2006; Rohrmann 1994; Rohrmann 2003; Slovic, 1986).

In a similar vein, Sindhu and Kumar (2014) state that risk perception is the belief, whether rational or irrational, held by an individual, group or society about the chance of occurrence of a risk or about the extent, magnitude, and timing of its effect. However, the concept of risk perception, according to Wachinger, Renn, Begg and Kuhlicke (2013), is often misinterpreted as a term to describe risk tolerance. In practical terms, risk perception involves a subjective cognitive appraisal of the riskiness of the outcome of a decision. A more recent definition by Micic (2016) posits that risk perception is a broad term, which encompasses

individual's beliefs, attitudes, judgments, and feelings in addition to cultural and social disposition.

Wachinger, Renn,Bianchizza, Coates, De Marchi, Domènech, and Pellizzoni (2010) established a philosophical perspective to the study of risk perception to include the realist approach and the constructivist approach. The realist philosophical point of view assumes that there is an outside objective world with risks that we can recognise and acknowledge (Rosa, 2008). Constructivist's perspective, in contrast, establishes that risk is not objective but is subjective and socially constructed (Ricciardi, 2007).

Risk perception among other factors is considered a major challenge in lending decisions by financial service providers in the SMEs sector (Bowen, Morara & Mureithi, 2009). This view is supported by Basel II Accord (2008) reports that established that taking risk has become part of financial intermediation. Therefore, an organisation that is totally risk-averse is not likely to attract investors and may be doomed to fail. It is imperative for financial providers to devise risk mitigation strategies to reduce the loss of funds to SME borrowers.

Types of Risks

Basel (2001) reports that credit risk, market risk, liquidity risk, foreign exchange risk, operational risk, political risk, reputational risk among others are types of risks that the banking and financial industries face today. Equally important, among these risks is credit risk which have been described as the core pillar and the main risks that financial service providers encounter in their credit

delivery (Abu-Hussain & Al-Ajmi, 2012; Khalid & Amjad, 2012). According to Oliyide (2012), credit risk is the leading source of risk which affect the profitability and by extension thwart the sustainability of financial institutions. Afriyie and Akotey (2012) indicate that collapse and financial problems encountered by financial service providers are as a result of inappropriate credit risk management practices.

According to Basel Accord (2006), credit risk is the risk of loss due to an obligator's non-payment of an obligation in terms of a loan or other lines of credit. In another dimension, Chen and Pan (2012) define credit risk as the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counter-parties. The exposure to credit risk continues to be the leading source of problems in the financial sector and as a result needs to be managed (Cornett, McNutt, Strahan & Tehranian, 2011). Credit risk is identified as a core pillar for the viability of banks and credit institutions (Kithinji 2010; Stephanou & Mendoza, 2005). Several bodies of theories and authorities in risk management have defined credit risk by practice as the possibility or potential of financial loss resulting from the failure of debtors for any reasons to fully honour their financial obligations to the lending institution (Chikomba et al., 2013).

The Basel Committee on Banking Supervision defines credit risk as potential default of a borrower to meet the obligation in accordance with the agreed term (BIS, 2005). Gestel and Baesens (2009) indicate that credit risk is the largest risk that financial institutions face in the course of their business operations. In another dimension, Afriyie and Akotey (2012), Kolapo, Ayeni and Oke (2012)

established that among other risks faced by financial service providers, credit risk plays an important role in financial providers' financial performance since a large amount of financial providers' revenue accrue from loans from which interest margin is derived. In line with the above definition of credit risk, Jappelli and Pagano (2002) assert that credit risk is commonly measured and communicated as the probability of an individual borrower's default.

Kargi (2011) concurs that credit risk may arise from an inability or unwillingness on the part of the borrower to honour the financial obligation based on the contractual agreement. This can affect the lender of a loan contract as well as other investors and lenders. Credit risk in the financial sector is mostly caused by adverse selection and moral hazards due to information asymmetry. According to Chelagat (2012), credit risk inherent in SMEs occurs when there is a weak appraisal of loans which can lead to delinquencies. The author explains that before a loan is granted, client's repaying capacity, the status of business, and cash flows must be assessed.

The main sources of credit risk, according to Breuer, Jandacka, Rheinberger and Summer (2010) and Nijskens and Wagner (2011), are poor governance and management control and inappropriate credit policies. Similarly, Kithinji (2010) articulates that government interference and inadequate supervision by the central bank are the causes of credit risk. Furthermore, Kaaya and Pastory (2013) cite volatile interest rates, poor credit assessment and laxity in credit assessment as the determinants of credit risk. In a related argument, Hunt and Hayward (2018) cited financial incentives provided to the employees of financial institutions and that

those employees have a strong tendency to opportunism and moral hazards by lending to poorly performing firms and individuals with questionable credit records.

Previous research study by Jiménez and Saurina (2004) indicate that collateralized loans have a high possibility of default, because financial service providers tend to trust the borrowers with secured loans and hence, fewer incentives to undertake adequate screening and credit assessment. In light of the above, Armendáriz and Morduch (2010) report that inefficient financial service providers offer poor screening and monitoring of borrowers, and as a result leads to inferior loan portfolio. However, Kaaya and Pastory (2013) point out that economic downturn as an external factor, affects the ability of individuals, institutions and other borrowers` ability to repay their debts hence high possibility of failure to fulfil their financial commitments.

The World Bank (2012) finds that in the condition of uncertainty and information asymmetry, it is hard to design an incentive system for financial institutions employees who are in charge of credit and lending. Equally important, Afriyie and Akotey (2012) indicate that credit risk situation of financial service providers can be aggravated by inadequate institutional capacity, inefficient credit guidelines, and inefficient board of directors, low capital adequacy ratios and liquidity, compulsory quota lending because of government interference and lack of proper supervision by the central bank. Therefore, responsible management of credit risk results in higher profit margins for financial service providers. The

management of credit risk is central to the financial service provider's management process (BIS, 2005).

Othman and Ameer (2009) defined market risk as the risk of financial gain or loss due to exposure to fluctuations in market prices. According to Saunders, Cornett, and McGraw (2006), the four standard market risks are: interest rate risk, or the risk that interest rates will change; currency risk, or the risk that foreign exchange rates will change. Specifically, Greenwald and Stiglitz (1993) conceptualise market risk as the change in the price of securities caused by fluctuations overall market conditions or in a specific sector of the market, brought on by outside forces. More simply stated, market risk is another name for losses due to the falling prices of securities.

According to Power (2004), political risk refers to possible changes in the government or legal environment. For instance, with political risk taxes may rise, tariffs may be imposed, or wages and prices may be controlled. All of these things could result in reduction in a company's profits. Political risk has traditionally been referred to as 'discontinuities' (Hansen, Mena & Aktas, 2019) and considered to be limited to actions of national governments mainly involving confiscation, discriminatory taxation, contract repudiation, currency inconvertibility , embargo, expropriation of property, nationalisation, or war risk (Howell, 2007).

Gillespie (1989) believed that the earlier definitions of political risk emphasized on the role and actions of national governments and these actions in the political domain may result in business losses. According to Fitzpatrick (1983), a wider political risk definition needs to recognise that risk emanates from political

processes which are influenced by various environmental variables or on-going change. Chauhan, Kumar and Sharma (2015) as well as Clark and Tunaru (2003) assert that on-going change, takes the form of continuous activities such as macroeconomic management and monetary policy, legislation, and social or political evolution, which may affect the overall business environment.

Foreign exchange rate or currency risk arises because of fluctuating foreign exchange rates. According to Froot and Stein (1991), fluctuations may affect the value of foreign investments or profits when converting them into currency. Foreign exchange risk is incurred when there is an unexpected change in exchange rate altering the amount of home currency needed to repay a debt denominated in foreign currency. Bessis (2011) conceptualised foreign exchange risk as losses incurred due to changes in exchange rates. Such loss of earnings may occur due to a mismatch between the value of assets and that of capital and liabilities denominated in foreign currencies or a mismatch between foreign receivables and foreign payables that are expressed in domestic currency

Basel Accord (2007) defines operational risk as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. Operational risk refers to an unexpected failure in a company's day-to-day operations. It could be a technical failure, like a server outage, or it could be caused by your people or processes. Several research studies have indicated that operational risk has more than one cause. For example, the risk that an employee of a firm writes the wrong amount on a check resulting in paying out $150,000 instead of $15,000 from the firm's account. Basel Accord (2007)

defines operational risk as the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events. Therefore, operational risk can be conceptualise as the risk of loss due to human error or deficiencies in firms' systems or controls as a result of the day to day operations of the institutions.

According to Lam (2014), reputational risk occurs when an institution reputation is damaged resulting in an immediate loss of revenue, as customers become wary of doing business with the institution. With this category of risk, employees may get demoralized and even decide to leave. Firms may find it hard to hire good replacements, as potential candidates might have heard about the bad reputation and will not want to join the firm (Wilden, Gudergan & Lings, 2010). Suppliers may start to offer less favourable terms. Likewise, advertisers, sponsors or other partners may decide that they may no longer want to be associated with the firm. Dyer and Whetten (2006) report that reputational risk can take the form of a major lawsuit, an embarrassing product recall, negative publicity about staff, or high-profile criticism of the firm's products or services.

Linsmeier, Thornton, Venkatachalam and Welker (2002) conceptualised market risk as the risk to earnings arising from changes in underlying economic factors such as interest rates or exchange rates, or from fluctuations in bond, equity or commodity prices. Banks are subject to market risk in both the management of their balance sheets and in their trading operations. Market risk is generally considered as the risk that the value of a portfolio, either an investment portfolio or a trading portfolio, will decrease due to the change in value of the market risk

factors. There are three common market risk factors to financial service providers and these are liquidity, interest rates and foreign exchange rates. Market risk management provides a comprehensive framework for measuring, monitoring and managing liquidity, interest rate, foreign exchange and equity as well as commodity price risk of financial institutions.

According to Greuning and Bratanovic (2009), financial service providers face liquidity risk when they do not have the ability to efficiently accommodate the redemption of deposits and other liabilities as well as non-performing loans and investment portfolio. Liquidity is considered as the life blood of every institution especially with finance related institutions. Liquidity risk according to Diamond and Rajan (2001), refers to the chance that an asset may not be easily sold, or may not receive its full market value, especially if it must be sold on short notice. Bessis (2011), however considers liquidity risk as situation where financial service providers have difficulties in raising funds at a reasonable cost due to conditions relating to transaction volumes, level of interest rates and their fluctuations and the difficulties in funding a counterparty.

Effective liquidity risk management therefore helps ensure financial institutions ability to meet cash flow obligations, which are uncertain as they are affected by external events and other agents' behaviour. Means (2017) believes that if a company’s stock is held by relatively few stockholders and demand for the shares is not high, one of those stockholders might have difficulty finding a buyer, which could affect the stock’s price.

Interest rate risk is the potential for changes in interest rates to reduce financial institution earnings or value. Studies have shown that most of the loans and receivables of the balance sheet of financial institutions generate revenues and costs that are driven by interest rates and since interest rates are unstable, so are such earnings. A Study by Greuning and Bratanovic (2009) posit that financial service providers encounter interest rate risk from four main sources namely repricing risk, yield curve risk, basis risk, and optionality. Studies have shown that the key and most often discussed source of interest rate risk emanates from timing differences in the maturity of fixed rates and the repricing of the floating rates of financial institutions' assets, liabilities, and off-balance sheet position.

From the above discussion, it is believed that among all the risks that financial service providers encounter in their credit delivery, credit risk of SMEs borrowers is the most significant risk affecting profitability and sustainability of financial institutions. However, the definition of SMEs has gained international and academic debate. Discussed below are the definitions and characteristics of small and medium-sized enterprises.

Small and Medium-Scale Enterprises

SMEs have had a privileged treatment in the development literature, particularly, over the last decades. The issue of what constitutes a small or medium-scale enterprise is a matter of contention in literature (Acs & Kallas, 2008). Different countries and authors have usually given different definitions to this category of business (Abor & Quartey, 2010). However, Storey (2016) establishes

that a small firm differs in terms of the level of capitalization, sales and possibly, employment levels from one particular industry to another industry. The Bolton Committee (1971) has an "economic" and "statistical" definition of a small firm.

Under the economic definition, Abor and Quartey (2010) state that a firm is small if it has a relatively smaller share of the market and is managed by owners or part owners in a personalized way and not through the medium of a formalized management structure. Storey (2016) reports that the statistical definition of small firm takes into consideration the size of the small firm sector and its contribution to GDP, employment and exports. Moreover, Beck and Demirguc-Kunt (2006) indicated that the extent to which the small firm sector's economic contribution has changed and cross-country comparison of the small firms' economic contribution are taken into account.

OECD (2002) establishes that the EU and a large number of OECD, transition and developing countries set the upper limit of a number of employees in the SMEs between 200-250, with a few exceptions such as Japan (300 employees) and the USA (500 employees). The European Union further defines three classes within the context of SMEs. These are Micro-enterprise, Small enterprise and Medium enterprise. Micro-enterprises are defined as enterprises that have between zero and nine employees. Small enterprises are defined as those with employees between 10 and 99 and medium enterprises as those with employees between 100 and 499 (Carter & Jones-Evans, 2009).

According to Abor and Biekpe (2006), there have been various definitions given for small-scale enterprises in Ghana, but the most commonly used criterion

is the number of employees of the enterprise. In applying this definition, however, there are some arguments in respect of the arbitrariness and cut-off points used by the various official records (Abor & Quartey, 2010). The Ghana Statistical Service (2005) considers small businesses as enterprises that employ less than 10 persons, while those that employ more than 10 employees are classified as medium-sized enterprises. Abor and Quartey (2010) state that ironically, the GSS (2005), in its national accounts, considered businesses with employee strength of up to nine as SMEs.

In contrast to Abor and Quartey (2010), Ahiawodzi and Adade (2012) revealed that the National Board for Small Scale Industries utilises both the fixed asset and number of employees' criteria to define SMEs. According to the NBSSI, enterprises with not more than nine workers, have plant and machinery (excluding land, buildings and vehicles), and not exceeding 10 million Cedis (US$ 9506, using 1994 exchange rate) are considered as small-scale enterprises (Nkuah, Tanyeh & Gaeten, 2013). The Ghana Enterprise Development Commission (GEDC), on the other hand, uses a 10 million Ghana cedis upper limit definition for plant and machinery.

Kayanula and Quartey (2000) caution that the process of valuing fixed assets poses a problem and the continuous depreciation of the local currency as against major trading currencies often makes such definitions outdated. Ahiawodzi and Adade (2012) showed that a definition that is more recent is the one given by the Regional Project on Enterprise Development Ghana manufacturing survey paper. The survey report classifies firms into (i) micro-enterprise, less than 5

employees; (ii) small enterprise, 5 - 29 employees; (iii) medium enterprise, 30 – 99 employees; (iv) large enterprise, 100 and more employees. The operational definition of small scale enterprises in this study constitute a business entity with an employee size of less than 10, while a medium-scale enterprise constitutes firms with employees between 10 and 100 (Abor & Adjasi, 2007; Ghana Statistical Service, 2010).

King and McGrath (2002) hypothesised that SME managers with more education and training are more likely to be successful. Muller and Posel (2004) also postulate that managers of SMEs develop their own approach to management through a process of trial and error. As a result, their management style is more intuitive than analytical, more concerned with day-to-day operations than long-term issues (Beck & Demirguc-Kunt, 2006). McGrath (2005) reports that many SMEs owners, especially in developing countries, lack managerial training and experience. Besides, Muteti (2005) emphasizes that SMEs use obsolete and inefficient machines in their operations.

Most SMEs are unregistered and solely owned with limited human capacity, finance and logistics to formulate any kind of governance policies with clear visions, missions and objectives (Muteti, 2005). SME owners are not well equipped to carry out managerial routines for their enterprises due to limited or no formal education. Abor and Quartey (2010) establish that most SMEs operate in one-person businesses. The largest employment category is working proprietors. This group makes up more than half the SME workforce in most developing countries.

In looking at the gender of ownership, most female-owned businesses operated from home are mostly not considered in official statistics. Abor and Biekpe (2006) indicated that females who are mostly involved in sole-proprietorship businesses are mainly micro-enterprises and as such, may lack the necessary collateral to qualify for loans. Abor and Quartey (2010) found that a majority of owners of SMEs are female-owned businesses, which more often than not, are home-based, compared to those owned by males. In an earliest study, Fisher and Reuber (2000) as well as Hoq, Ha and Said (2009) noted that SMEs mostly engaged in retailing, trading, or manufacturing. It is a common perception that the majority of SMEs will fall into the retailing category (Abor & Quartey, 2010). The proportion of SME activity that takes place in the retail sector varies considerably between countries, and between rural and urban regions within countries

Correspondingly, SMEs are more labour intensive than larger firms and therefore, have lower capital costs associated with job creation (Anheier & Seibel, 1987; Liedholm & Mead, 1987; Schmitz, 1995). Belal (2013) observes that SMEs are vehicles for bridging the income disparities; consequently, SMEs owners assemble skilled or semi-skilled workers as a basis for the future industrial expansion. SMEs offer excellent breeding grounds for entrepreneurial and managerial talent to thrive (Zeinalnzehad, Sahran, Mukhtar & Pourrostam, 2010). However, OECD (2015) reports that many SMEs do not keep records and do not have business plans; a tool which gives direction and marketability of the business and performance benchmarks.

Wiboonchutikula (2002) reports that most SMEs do not publish audited financial information that can be shared with providers of finance. Due to incredible information, small firms have to provide collateral to reduce such risks. However, they often do not have enough assets to secure loans (Small Industry Credit Guarantee Corporation, 2005). Most studies in developing countries indicate that the smallest firms are the least efficient, and there is some evidence that both small and large firms are relatively inefficient compared to medium-scale enterprises (Abor & Quartey, 2010). Acs and Virgill (2010) argue that SMEs are more innovative than larger firms. Many small firms bring innovations to the market place, but the contribution of innovations to productivity often takes time whereas larger firms may have more resources to adopt and implement them.

Lending Risk Associated with SMEs

Small and medium scale enterprises (SMEs) are often described as efficient and prolific job creators, the seeds of big businesses and the fuel of national economic engines (OECD, 2005). However, Oliyide (2012) believes that SMEs cannot function effectively without lending institutions providing needed funds to 'oil the wheels' for the operation of their activities. According to Abor (2017), lending money is a risky business and for this reason, sufficient knowledge on borrowers are required to be able to identify and analyze the risks inherent in any lending situation.

Lending risk, according to Bank for International Settlement (2005), is the potential that a counter-party or borrower fails to fulfill the financial obligations in

accordance with the agreed terms. A study by International Financial Corporation (2011) revealed that financial institutions are averse to lending to SMEs because of the high risk of such lending. In an earliest study, Altman and Hotchkiss (2010) observed that due to the higher default risks assessment as well as administration costs involved in lending to small firms, conditions that are more restrictive are applied to small firms in order to reduce default risk. In like manner, Hashim (2012) argues that small firms are challenged with information opacity and therefore are incapable of providing financial information

International Financial Corporation (2008) indicates that financial service providers regard SME lending as a high-risk activity, given the larger amount of business failures transpiring in the sector. Consequently, financial institutions will inevitably charge a higher risk premium. In a related argument, Tagoe et al. (2005) demonstrate that the charge to some extent could be mitigated depending on the level of capital that the owner has in the business, the degree of profitability, the extent to which profits remain in the business and the value of security offered.

According to Coco (2000), the value of collateral provides the basis for reducing information asymmetry and moral hazards problems that could emerge between small business owners and rural lenders. Smith and Fatoki (2012) assert that the use of collateral has a positive impact on the risk perception of the entrepreneur and the business. Nevertheless, Mutezo (2013) suggests that loan defaults have motivated lenders to impose sizable collateral requirements to reduce the risk arising from default, and that this practice has earned East Asia's banks the reputation of being pawn shops financial institutions. Financial service providers,

basically, rely on collateral as the last resort for recovering a loan in the case of default; the collateral can be sold to recover part of the loan.

The willingness of the SMEs borrowers to provide collateral signifies the confidence and commitment to the business (Lehmann & Neuberger, 2001). It is important to note that collateral serves as a screening device and as such, helps to reduce risk of lending for financial institutions. In like manner**,** Jimenez and Saurina (2004) indicate that collateral pledged by borrowers may help attenuate the problem of adverse selection faced by the financial institution when lending. In light of the above, Jimenez and Saurina (2004) established that lower risk borrowers are willing to pledge more and better collateral, given that their lower risk means they are less likely to lose it. Thus, collateral acts as a signal, enabling the financial service provider to mitigate or eliminate the adverse selection problems (Beck & De La Torre, 2006).

A study by International Financial Corporation (2011) shows a high probability of default by SMEs borrowers and the need for financial institutions to be compensated for the default risk that will be incurred by way of default risk premium. The default risk premium, which compensates the lender for the expected loss on a loan, is the difference between the return on a risky loan and the risk-free rate. In an earliest study, Sinkey (1992) posits that apart from the return on a risky loan being the interest rate, the credit evaluator also assesses the expected probability of default by considering other factors in determining credit worthiness and the ability to pay. These criteria include the 3C's, 4C's or the 5C's of credit

which are character or reputation, capital or leverage, collateral, capacity, and condition (Soares, Pina, Ribeiro & Lopes, 2011) .

Credit Risk Management Techniques

Early (1996) and Coyle (2000) describe credit risk management as the identification, measurement, monitoring and control of risk arising from the possibility of defaulting payment of a loan contract. Risk management can be regarded as a vigorous, tactical, and integrated process that encompasses both the measurement and the mitigation of risk, with the ultimate goal of maximizing the shareholders' value of the bank, while minimizing the risk of bankruptcy (Schroeck, 2002). The process of risk management comprises the fundamental steps of risk identification, risk analysis and assessment, risk monitoring, and risk treatment or control (Bikker & Metzmakers, 2005; Buttimer, 2001). The goal of credit risk management, according to Duffie and Singleton (2012), is to maximize the bank's risk-adjusted rate of return by maintaining credit risk exposure within the acceptable parameters.

Unlike Bikker and Metzmakers (2005), Gestel and Baesans (2009) observed that in a proper risk management process, one needs to identify the risk, measure, quantify the risk, and develop strategies to manage the risk. In like manner, Afriyie & Akotey (2012) indicated that the policy of risk management is of great concern. Formation and implementation of a good credit policy is important to financial service provider's profitability and sustainability. Addae-Korankye (2014), cited in Kohansal and Mansoori (2009), asserts that various institutional mechanisms

should be introduced to ensure a reduction in the risk of loan default by most SMEs borrowers. Chikomba, Dube and Tseka (2013) believe that globally, more than 50 percent of total risk elements in banks and other financial institutions constitute credit risk.

Richard, Chijoriga, Kaijage, Peterson and Bohman (2008) posit that a lending policy should contain an outline of the scope and allocation of financial service provider's credit facilities and the manner in which a credit portfolio is managed, how loans are originated, appraised, supervised and collected. Golin and Delhaise (2013) state that the mechanisms for mitigating credit risk include pledging of collateral, third-party credit guarantee, use of credit rating and collection agencies risk-based pricing and the use of covenants.

In an earliest study, Saunders and Allen (2010) indicated that risk management requires financial service providers to carry out proper credit analysis of potential borrowers in order to judge the credit risk of the borrower and as such, finalize on whether to grant credit or limit access to credit to borrowers. Duffie and Singleton (2012) assert that through proper credit analysis, the probability of default and the expected loss that the financial service provider would incur in case of default are determined. Here, the credit-worthiness of the firm is assessed, and the financial history and collaterals are taken into consideration. Credit risk analysis, according to OECD (2015), is the process whereby the lending decision is based on an evaluation of the firm's financial position and its future prospects.

Sheila (2011) believes that good credit risk management involves proper and adequate appraisal of SMEs borrowers. According to Kalra (2012), credit

appraisal is the process by which a lender appraises the credit-worthiness of the prospective borrower. This normally involves appraising the borrower's payment history and establishing the quality and sustainability of his income. In like manner, Addae-Korankye (2014) demonstrates that the appraisal stage is the heart of a high-quality portfolio.

According to Chepkorir, Osiemo and Wambua (2014), appraisal by financial intermediaries can be categorized into four main distinct credit appraisal techniques. These include financial statement lending, asset-based lending, credit scoring, and relationship lending. According to Chepkorir (2014), the first three credit appraisal techniques are often referred to as transactions-based lending, under which the appraisal decisions are based on hard information that is relatively easily available at the time of loan origination and does not rely on the soft data gathered over the course of a relationship with the borrower. Following from the above, these techniques are employed to address the types of problems that can lead to either credit rationing or over lending (Honohan, 2010; de Meza & Webb, 1987; Stiglitz & Weiss, 1981).

Scheule, Baesens and Rösch (2016) observed that credit risk measurement involves rating or scoring of loan applicants. Accordingly, Garmaise (2015) observed that credit scoring predicts the probability that a loan applicant or existing borrower will default or become delinquent. This assertion is evident in Ogujiuba, Ohuche and Adenuga (2004)'s study that established that credit-scoring rule involves attaching heavy statistical weights to the financial conditions and history

of the principal owner, given that the credit-worthiness of the owner and that of the firm are closely related for most small businesses.

According to Ochung (2013), credit-scoring systems utilize information relating to the traditional 5Cs of credit namely; character, capacity, collateral, conditions and capital. In a similar vein, Abraham and Zhang (2013) as well as Turvey, He, Kong, Ma and Meagher (2011) identified four C's of assessing credit-worthiness to include character, capacity, capital and conditions. Agyapong, Agyapong and Darfor (2011) and Rouse (2002) identified three separate mnemonics for the assessment of credit worthiness. These are CCCPARTS (Character, Capital, Capacity, Person, Purpose, Amount, Repayment, Terms and Security), PARSER (Person, Amount, Repayment, Security, Expediency, and Remuneration), and CAMPARI (Character, Ability, Margin, Purpose, Amount, Repayment and Insurance).

Mester (1997) observed that the adoption of credit scoring has resulted in improved objectivity in the loan approval process. Accordingly, Dinh and Kleimeier (2007) identified the major variables commonly used in credit scoring models to include the borrower's income, age, gender, education and collateral value, which is a commonly used proxy for the borrower's financial wealth and his or her ability to repay. Wang (2010) states that the objectivity in credit scoring helps lenders to ensure that they are applying the same underwriting criteria to all borrowers regardless of race, gender or other factors prohibited by law from being used in credit decisions. Furthermore, Mutezo (2013) argues that psychometric testing efficiently administers score in thirty to forty minutes, which measures

attributes such as entrepreneur's psychological profile, ethics and integrity, intelligence and business skills.

Following from the above, Arráiz, Bruhn and Stucchi (2016) and Mutezo (2013) find that psychometric testing which is a qualitative assessment of credit-worthiness, has successfully been used by banks in Chile and Argentina, while a bank in South Africa has successfully adopted it in a pilot study for determining credit-worthiness of borrowers. Equally important, Klinger, Castro, Szenkman and Khwaja (2013) showed that the psychometric testing looks at areas such as SME competitiveness by looking at the strength and integrity of the entrepreneur. In addition, it also focuses on SME management; that is ownership, structure and relationship with the financial service provider as well as relationship with suppliers and customers.

Effective credit risk management involves monitoring and financial institutions' regular visits. Monitoring, according to Richard et al. (2008), involves, among others, frequent contact with borrowers, creating an environment that the financial service provider can be seen as a solver of problems, and a trusted adviser. Chikomba et al. (2013) suggest the need for financial service providers to regularly monitor the status of borrowers and re-evaluate individual credits and commitments as well as their ratings. A recent study by Hopkins (2017) found that effective risk management requires reporting and reviewing the structure to ensure that risks are effectively identified, assessed and appropriate controls and responses are put in place.

Uniquely, Alloyo (2013) shows that credit referencing bureaus have recently emerged to do regular monitoring. In like manner, Kahindi and Kaplelach (2016) state that Credit Reference Agency or Credit Bureau is an organization that collects and collates personal financial data on individuals, from financial institutions with which they have a relationship with. Therefore, for effective credit risk management, institutions must include procedures governing regular assessment and where applicable.

Chelagat (2012) argues that because of frequent contact with borrowers, credit officers are in a position to detect changes in a borrower's operations or financial condition. Borrowers operation and financial conditions takes into consideration the age of owner, educational status, gender of owner, firms' size, collateral. The relationship that exists between firm characteristics and probability of defaults include the age the firm has been in operation, the size of the firm, educational attainment of the owner, collateral value and gender of the owner of the firm. Below are the relationships that exist between the variables.

Firm Characteristics and Credit Risk

Age measures the borrower's age in years and according to Lehmann and Neuberger (2001), the age of the firm provides a signal concerning credit risk. Drakos and Giannakopoulos (2011) demonstrate that the age of a firm is usually viewed as an indicator of a firm's quality, since longevity of the firm may provide a signal for survival ability and quality of management as well as the accumulation of reputational capital. This view is supported in an earlier study by Jiménez (2003)

that firms that have been in operation for a longer period have lower credit risk. Correspondingly, Maziku (2012) reports that firms in existence between 2-6 years carry highest bankruptcy risk, whereas long success cannot be expected before seven years after birth.

Previous research by Boyle, Crook, Hamilton and Thomas (1992) as well as Audia and Greve (2006) indicated that older borrowers are more risk averse, and therefore, less likely to default. Therefore, financial service providers are hesitant to lend to younger borrowers who are more risk embracing. In light of the above, Sapienza, Autio, George and Zahra (2006) indicated that because of the liabilities associated with newness of firms, financial service providers may view younger firms as riskier than they may view older firms. In contrast to Sapienza et al., Berger and Udell (2006) argued that older firms are riskier, since financial service providers tend to trust older firms who have secured loans and hence, fewer incentives to undertake adequate screening and credit assessment.

A number of explanations have been proposed for small firms' disadvantages in loan markets. Cassar and Holmes (2003) observed that smaller firms may have lower collaterals relative to their liabilities than larger ones, and unit bankruptcy costs are likely to decrease with size. According to the World Bank (2005), smaller firms have higher risk and as such have a higher rate of failure compared to large firms. Moreover, Gabriel (2015) concluded that when firms are smaller, they pose higher risks because small firms have high failure rate compared to large firms. Schiffer and Weder (2001) indicated that sampled firms across a

number of countries revealed that there is a negative relationship between the size of a business and the risk it might pose for a lender.

According to Brehanu and Fufa (2008), education enhances the borrower's ability to repay. Previous studies have reported that better educated borrowers are deemed to have more stable and higher income, secured employment and thus a lower default rate (Stiglitz & Uy, 1996). The borrowers' education level can be distinguished from post-graduate to non-high school graduate. Borrowers with a high level of education are more likely to repay their loans, since they occupy higher positions with high income levels. Stiglitz and Uy (1996)'s study on the inverse relationship between educational status and credit risk is complemented by Cassar (2004) study of financing of business start-ups.

The relationship between education and loan repayment has been widely investigated and this view is supported by Bassem (2008) who writes that there is a positive relationship between the level of formal education and the sense of responsibility and reputation, which reduces the probability of default and that, is very vital to the lender in making financial decisions. In a study which set out to determine the variables that could lead to default loans of SMEs, Bruns and Fletcher (2008) found that educational status could influence firms' credit risk considerably.

The impact of collateral on credit risk is a subject that has stirred a lot of controversy. Collateral is a form of guarantee to support the loan. The type of collateral used correlates positively with risk of default. Mensah (2004) believes that collateral reduces the financial service providers' risk when loans are made to SMEs borrowers. According to Gup and Kolari (2005), borrowers' collateral can

be a sign of default risk. Thus, the probability of default is very low for loans that a house, for example, serves as collateral. This is because of the fear of the borrower losing the house. The higher the collateral value, the higher the incentive for the borrowers to repay the loan, since they do not want to lose their collateral (Menkhoff, Neuberger & Rungruxsirivorn, 2012).

Jeminez and Saurina (2004) point out that lower risk borrowers are willing to pledge more and better collateral, given that their lower risk means they are less likely to lose it. There are also theoretical arguments by Manove, Padilla and Pagano (2001), supporting the possibility that more collateral, implies more non-performing loans or greater probability of default. Thus, collateral acts as a signal, enabling the financial service provider to mitigate or eliminate the adverse selection problem caused by the existence of information asymmetries between the financial service provider and the borrower at the time of the loan decision (OECD, 2013).

The relationship between gender and credit risk has been analysed in a number of studies. A number of studies found that women consistently outperform men in terms of repayment. The assertion that women are good credit risk is repeatedly put forward by financial advocacy networks and sponsors. A study by Ssendi and Anderson (2009) indicate that women are consistently better in promptness and reliability in payment (Marrez & Schmit, 2009). D'espallier, Guérin, and Mersland (2011) report that the repayments of loans are higher among female borrowers, mostly due to more conservative investments and lower moral hazard risk.

Identically, Kevane and Wydick (2001) state that female groups perform better than male groups in Guatemala in terms of loan repayment. A report on the Grameen Bank, according to Gross, Cekic, Hossler and Hillman (2009), indicate that men are more likely to default than women. In a related study, De Aghion and Murdoch, (2005) as well as Kevane and Wydick (2001) report that women have better repayment records than men. In a similar vein, a study by Marrez and Schmit (2009) revealed lower default rates for women segments compared to male segments and as such the loss rate is lower for women than for men.

Previous study by Godquin (2004) shows that relationship between gender and repayment is positive, but not significant. Also, studies by Espaller, Guerin and Mersland (2009), using a large global data set survey in 350 Micro-finance institutions in 170 countries found out that more women clients are associated with lower risk of default, lower write-offs, and lower credit-loss provision. This finding confirms that women in general, are better credit risk for financial providers. On the contrary, a number of studies established that there are no significant relationships between gender and credit risk.

Empirical Review on Credit Risk and SMEs Financing

This section of the thesis discusses the empirical literature on the risk perception in financing SMEs. The purpose is to understand other studies that have been conducted using the theories employed in this study.

Al-Tamimi and Al-Mazrooei (2007) examined the degree to which the United Arab Emirates' (UAE) financial institutions used risk management practices

and techniques in dealing with different types of risk inherent in borrowers. The secondary objective was to compare risk perception and management practices between the two sets of financial institutions. The approach employed was quantitative. The questionnaires were divided into two parts. The first part covered six aspects: understanding risk and risk management, risk identification, risk assessment and analysis, risk monitoring, risk management practices, and credit risk analysis. These parts included 43 closed-ended items based on an interval scale. The second part was made up of two closed-ended items based on an ordinal scale dealing with two topics: methods of risk identification, and risks facing the sampled banks.

The target population included 46 commercial banks, of which 21 of the commercial banks were national banks and the remaining 25 of the commercial banks wereforeign banks. The sample included eight national commercial banks and five largest foreign banks. Reliability of the scales was evaluated using Cronbach's alpha. Descriptive statistics were used to answer the research questions. Also, regression analysis and one-way ANOVA were used to analyse the data. The study established that the most important types of risk facing the commercial banks are foreign exchange risk, followed by credit risk, then operating risk.

The findings of this study demonstrated that the UAE banks are somewhat effective in managing risk, risk identification, and risk assessment as well as analysis, are the most influencing variables in risk management practices.The author's findings rendered supports to the earlier findings of Wabo (2014) that the variables that influence risk management practices to address the high risks of

default include factors such as request for collateral, proper financial statements and knowledge on financial management.The results indicate that there is a significant difference between the UAE national foreign banks in the practice of risk assessment and analysis, and in risk monitoring and controlling.

Pham and Lensik (2007) conducted a study to compare the risk perception in formal and informal financial institutions and the lending policies of formal, semi-formal and informal lenders with respect to household lending in Vietnam. The study examined the determinants of probability of default across lender types. The study also compared lending policies of different types of financial intermediaries towards households in Vietnam. The dataset were drawn from a household survey on living standards in Vietnam and samples of 6,002 households were used in the study. The method of stratified random and cluster sampling was used in the study. A multinomial logit model was employed to examine the determinants of the probability of the use of formal, informal or semi-formal credit.

The data analysis focused on how different types of lenders try to avoid adverse selection and moral hazard problems by means of screening, monitoring, and enforcing laws on borrowers. The study found that formal credit institutions tend to associate the probability of default with contract-related items such as the loan interest rate and the form of loan repayment. The study also found that informal lenders, on the contrary, tend to link default risk to household-related characteristics and especially, the presence of close lender-borrower relationships. The policy implications to credit providers with respect to managing default risk demonstrate that on average, risk exposure is higher for loans of a larger size and

loans provided to poorer households or households with a high borrowing intensity. The study also established that women are safer borrowers from semi-formal credit even though their probability of borrowing is restricted

Beck et al. (2008) employed data from a survey of 91 banks in 45 countries to investigate the bank-financing situation to SMEs from the supply side. The study aimed to determine the perceptions of banks towards the SME sector and to identify the factors which influenced SME financing. The study also sought to determine the business models and the criteria used by banks in evaluating loans of SMEs. A quantitative approach was employed for the study. The survey targets the 5 largest banks in each country. A questionnaire was designed with 56 items focusing on three main areas namely how banks perceive the SME segment, the drivers and obstacles to SME financing and banks perception of the role of government programmes to support the SME finance. The questionnaire includes both open-ended and close-ended items. Descriptive data were generated for all variables and statistical significance was analysed using analysis of variance and t-tests as appropriate.

According to Beck et al. (2008), banks considered the SME sector to be very profitable, and their perceptions of government programmes supporting SMEs were positive. This study also found that the main obstacles to SME financing were macro-economic instability in developing countries, whilst in developed countries, it was competition. The study also found statistically significant differences in exposure, lending practices and business models, drivers and obstacles of SME finance for banks operating in both developed and developing countries.

Bruns and Fletcher (2008) investigated how Swedish lending officers make credit decisions to existing SMEs and to examine the importance of criteria used to form the decision. The study was also to highlight the interaction between factors that influence the credit decision, implications for SMEs, banks and research. A hypothesis concerning how information on the borrower's ability to repay the loan, alignment of risk preferences, and risk sharing that affect their willingness to grant credit, were formulated. A quantitative approach was employed, using a sample of 114 Swedish lending officers.

A conjoint experiment was used in the study. The variables were measured on a nine-point scale varying from 'Not at all likely' (score 1) and 'Very likely' (score 9). Regression analysis was performed for each individual and Pearson R correlation was calculated between each of the bank manager's responses on the 16 original cases and the 16 replicated lending profiles. To compare the means between the 16 original profiles and the 16 replications a paired sample t-test was used for the study.

The authors' findings rendered support to the works of Okurut et al., (2011) as well as Mori and Richard (2012) that financial service provider's place emphasis on the factors that shift risk such as request for collateral, proper financial statements and knowledge on financial management. Whereas Mori and Richard (2012) used content analysis to analyze the cases, Okurut et al., (2011) used probit model, while Bruns and Fletcher (2008) used regression analysis and Pearson correlation coefficient. The study found that SMEs with limited collateral are unlikely to be given a loan, regardless of their willingness to take the risk. The

findings suggest that banks place the strongest emphasis on the tangible accounting figures SMEs present, and factors that shift the risk from the bank to the borrower.

Using the Heckman Probit Model with sample selection, Okurut, Olalekan and Mangadi (2011) conducted a study to investigate the factors that influence the credit rationing behaviour of banks towards SMEs. The study also examined the characteristics of SMEs, which make banks to credit-ration them in Botswana. It was hypothesized that credit-rationing behaviour of financial service providers is negatively and significantly influenced by the collateral offered for the loan, business earnings, and business experience. The survey used 250 sampled SMEs from the main cities and towns in Botswana and key informant discussions with the banks on the supply side.

A questionnaire was used to collect information from the sampled SMEs on the challenges that they face in accessing bank credit and policy recommendations to improve banking and credit services. On the supply side, key informant interviews were conducted with all the main financial institutions in Botswana to elicit information on the main credit products that they have for SMEs; the eligibility criteria for SMEs to qualify for bank financing; the factors that banks take into account when determining the loan amount to be granted to SMEs, the challenges that banks face in extending loans to SMEs; and bank policy recommendations to improve the credibility of the SME sector in Botswana. The study employed the Heckman Probit model with a sample selection to estimate the determinants of the probability of SMEs being credit rationed by the banks.

The study utilized a combination of descriptive and econometric techniques. The descriptive method essentially involved the use of frequency distribution tables, while the econometric methods were used to measure empirically, the relationship between the dependent variable and the identified explanatory variables. The dependent variable was the probability of being credit rationed with explanatory variables being household socio-economic characteristics, enterprise characteristics, and loan characteristics depending on the specification of each model.

Okurut et al. (2011) indicate that bank's credit rationing behaviour may be influenced by a number of factors which include age, gender, wealth, experience, credit history, firm characteristics like business experience, risk profile, earnings, and loan characteristics including amount demanded, loan maturity, collateral offered, and interest rate. The study found that the experience of SMEs reduces their probability of being credit rationed by banks. From the banks perspective, the experiences of SMEs are determined from their ability to keep proper financial statements, the performance of their bank accounts with the financial providers, and their ability to make profits.

A study to appraise comprehensively the importance of SMEs and assess the extent of lending to SMEs was undertaken in Nigeria and published by Oliyide (2012). The purpose of the study was to map out laws for reducing the credit risks involved in SMEs lending and also suggest efficient risk-management mechanism aimed at minimizing credit risks. The study also examined, in general terms, the nature and types of risks involved in funding SMEs and to posit that the most

profound form of risk involved in SME lending is credit risk. The study uses qualitative analysis in order to gain insights about the variables studied. A case study approach was used in the study. The study established that the fear of high risk involved in lending to such enterprises is the chief factor that hampers SMEs funding.

The study found that banks, by their nature, are placed in the most advantageous position to finance SMEs, but that banks have, unrepentantly, shirked their responsibility in this regard, with the pretext of the high risks involved in financing SMEs. The study also found that the high credit risks involved in lending to SMEs by Nigerian banks are the main rationale for the banks' unwillingness to grant credit to SMEs. The study found that the aversion on the part of Nigerian banks is notwithstanding the enormous mechanisms provided by Nigerian law to minimise credit risks for banks. The findings of Oliyide (2012) support the idea of Mori and Richard (2012) that the SME sectors were perceived as too risky and as a results are the main rationale for the banks' unwillingness to grant credit to SMEs. However, this finding is in contrast to the findings of Beck et al. (2006) that SME sector is profitable and very competitive.

Mori and Richard (2012), in an effort to examine the reasons why financial service providers are averse in giving SMEs the amount they request as loans to finance their businesses, conducted a study in Tanzania. The theory of asymmetric information and agency theory was employed to explain the banks' lending behaviour, given the existence of the agency problem as well as the fact that lenders are imperfectly informed about the characteristics of borrowers. The study

employed a case study approach in collecting data. There were 15 banks that serve SMEs. Six banks out of the 15 accepted to participate and thus constituted the sample for the study. Structured interviews were used to collect primary data. Secondary data were gathered from different documents like World Bank reports, brochures and websites of financial institutions.

Bank officers dealing with SMEs' loan appraisal and administration with working experience of five years or more were targeted for the interviews. Questions covered background information of the bank; financial services offered to SMEs; maximum amount offered and reasons behind; loan appraisal; approval and administration procedures for both new and existing borrowers as well as key items to qualify borrowers for loans. Content analysis was used to analyze the cases and establish reasons provided by banks that make them not able to give additional financial support to SMEs.

The study found that SME sectors were perceived as too risky by banks, as a result of poor documentation by borrowers which made banks unable to assess their credit-worthiness. The study found out that many SME operators, who borrow working capital from banks, usually do not use the loan according to the reasons presented in their request. The study also found out that most SMEs perceive banks as grant providers forgetting that banks also engaged in businesses. It was established that banks are skeptical in giving loans to not only very risky businesses but also new businesses.

Wabo (2014), in an effort to identify a mathematical model which can be used in the risk quantification of small and medium-sized enterprises (SMEs),

conducted a study in Cameroon. The purpose of the study was in response to the high percentage of disputed or doubtful loans in 2009. The study sought to devise a credit risk strategy to address the high risks of default. The study population consisted of 179 individuals (SMEs) that received credit during the three-year period; 2008, 2009 and 2010. A quantitative approach was employed and a sample of 110 SMEs out of the population was used for the study.

A probability sampling method was used in the study. Interviews were conducted with banking executives. These interviews focused on assessing the credit risk of SMEs and the Basel II agreement. Open-ended questionnaires were administered to the managers of funds to evaluate each of the SMEs that have received credit. The questionnaire was in four parts; the organization, the resources management, the form of competition, and reputation. Logistic regression was used for the data analysis because some variables were qualitative and secondly, the technique does not require the normality of variables.

The study found that SMEs in the sample were very risky and this view is supported by Bruns and Fletcher (2008) who write that SMEs are risky and that financial service providers place emphasis on the factors that shift risk such as request for collateral, proper financial statements and knowledge on financial management. In contrast to Wabo (2014), Beck et al. (2006) argue that SME sector is a profitable venture and very competitive. The finding also revealed that up to 47 percent of loans granted to small and medium-sized enterprises (SMEs) were defaulted. The finding of Beck et al. (2006) that, SMEs sector are profitable and very competive cannot be generalized in developing economies as there are

opposing views. However, the findings from the literature has point out clearly that SMEs in developing economies are highly risky.

Lessons Learnt from the Literature Review

The study draws important lessons from the empirical review with respect to financial service providers' risk perception, risk assessment and credit rationing behaviour towards SMEs. In the above studies, the independent variables include age of the firm, size of the firm, sex of owner of the firm, educational attainment and collateral value. The age of firm, firm size, collateral value and educational status were continuous variables, while gender and marital status were dummy or categorical variables. Some of the variables were measured on a nine-point scales (Wabo, 2014) while others were ratio- scaled.

Most of the studies (Okurut, Olalekan & Mangadi, 2011; Pham & Lensink, 2007; Beck et al. 2008; Al-Tamimi & Al-Mazrooei, 2007; Bruns & Fletcher, 2008; Wabo, 2014) used the quantitative approach in analyzing the financial service providers' risk perception and assessment as well as credit rationing behaviour towards SMEs. For instance, Pham and Lensik (2007) and Okurut et al. (2012), used multinomial logit model and probit model, Wabo (2014) used logistics regression and Bruns and Fletcher (2008) used regression analysis, correlation analysis and paired sample t- test. However, Mori and Richard (2012) and Oliyide (2012) used case studies and qualitative approach to analyse financial service providers' risk perception in financing SMEs.

The sampling procedures adopted also conformed to quantitative and qualitative approaches. The empirical review indicates the use of simple random sampling, cluster sampling, stratified sampling and purposive sampling, in which primary data were sought for the analysis. The analytical tools used for primary data were mostly quantitative approaches including econometric models and regression analysis (Okurut, Olalekan & Mangadi, 2011; Pham & Lensink, 2007; Wabo, 2014) while qualitative narratives and content analysis were used (Mori & Richard, 2012; Oliyide, 2012). However, Mori and Richard (2012) used both primary and secondary data. Most of the studies used the credit rationing theory and agency theory (Okurut, Olalekan & Mangadi, 2011; Mori & Richard, 2012). However, the risk compensation theory was not incorporated in all the studies.

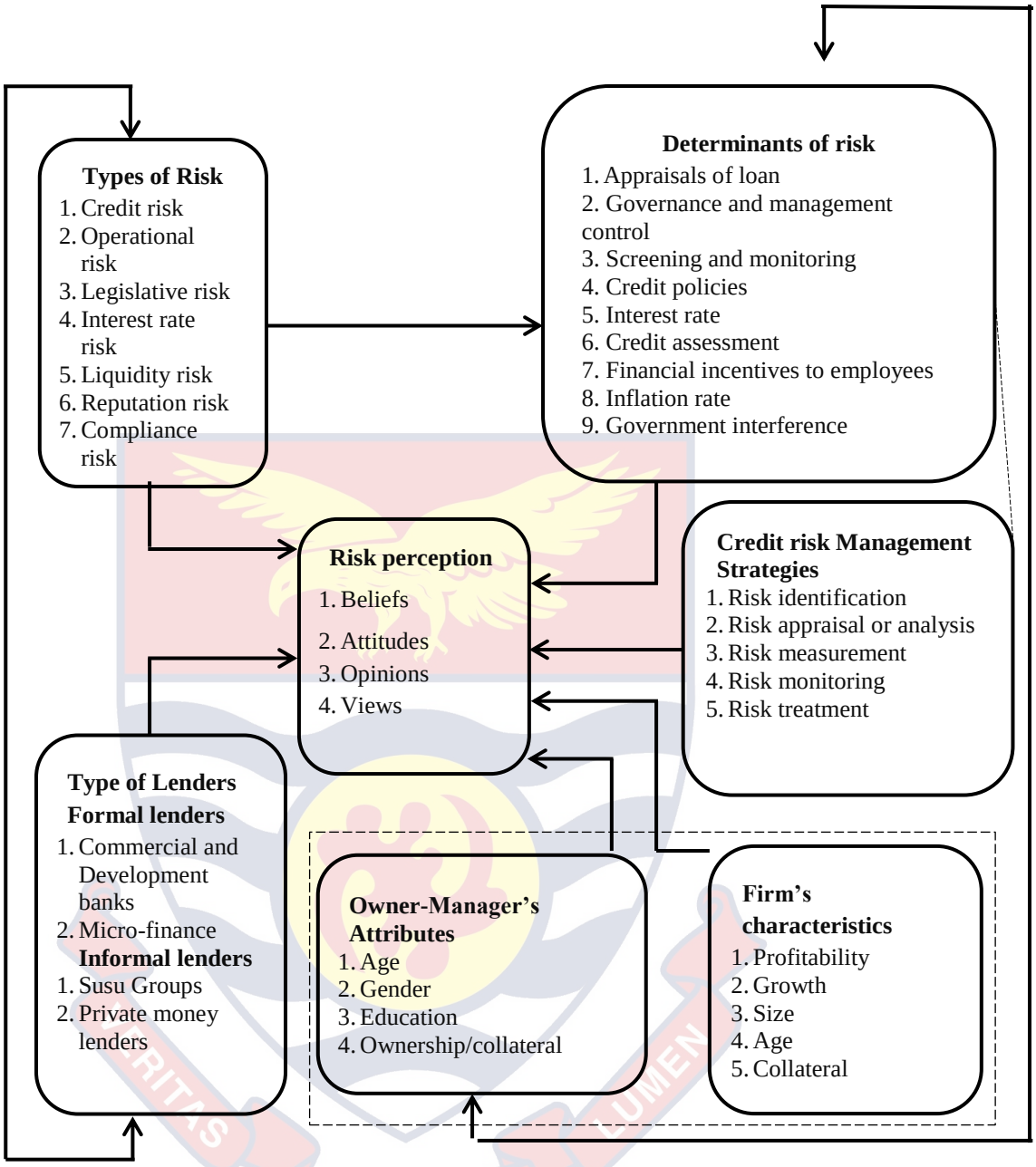

Figure 1: **Conceptual Framework for Analyzing Risk Perception in Financing Small and Medium-Sized Enterprises**

Source**:** Adapted from Kumar and Rao (2015)

Conceptual Framework for Analysing Risk Perception in Financing SMEs

The conceptual framework for the study was adapted from Kumar and Rao's (2015) framework for identifying financing preference of SMEs which

suggests that various channels are preferred for SMEs to obtain credit. The framework describes the various sources that SME operators use to obtain finance. The framework emphasizes on factors including owner-manager attributes such as age, gender, education and firm-specific characteristics such as size, age, profitability as well as macro-economic factors as the proxy for the finance preference. The framework was basically a demand-side policy on SMEs.

As posited by Kumar and Rao (2015), the framework can also fit to the supply side to explore the reasons why financial service providers perceived SMEs to be too risky and so are averse in lending credit to them.

Kumar and Rao's framework was modified in order to fit the objectives of the study. The dependent variable financing preferences in Kumar and Rao's framework was then modified to risk perception for this study as indicated in the middle of the conceptual framework. The box on the top right indicates the factors that are likely to affect credit risk. This includes appraisal of loans, governance and management control, financial incentives to employees, screening and monitoring, interest rate, credit assessment and credit policies. This is shown by an arrow that connects the determinants of risks and below is the risk management strategies such as risk identification, risk appraisal and analysis, risk measurement as well as risk monitoring and risk treatment or control. The above notions formed the basis for the second and third objectives of the study.

The dependent variable, risk perception, is in the middle of the framework. The arrow connecting types of risk to risk perception reveals that, in the credit delivery, financial service providers are susceptible to credit risk, interest rate risk,

market risk, foreign exchange risk, liquidity risk, compliance risk and legislative risk, however, among all these risks faced, credit risk is identified as the most significant, since its affects the profitability of institutions. This notion is emphasized in Levym and Miller's (2000) theory of risk compensation which postulates that financial service providers charge high-risk premiums to compensate them for the risk of defaults. The arrow connecting types of lenders to risk perception by intuition shows that, in credit delivery, attitudes, beliefs opinions and ideology about the severity of risk varies considerably among formal and informal lenders and this is reflected in some mechanisms enforced by lenders to mitigate risk.

The arrow connecting firm's characteristics and owners-managers attributes to risk perception by financial service providers shows that the decision to finance SMEs is influenced by the SME owners' attributes such as age, gender, education level and the ownership or collateral. This conception is established in Jensen and Meckling (1976) Theory of Principal-Agent and Stigilitz and Weiss
(1981) Theory of Credit Rationing which postulates that because of information asymmetry, principals are not able to verify the action of the agent, and so SMEs are eliminated from the stream of potential borrowers.

CHAPTER THREE

METHODOLOGY

Introduction

According to Creswell (2013), research methodology involves the forms of data collection, analysis, and interpretation that researchers propose for the study. Robson and McCartan (2016) define methodology as the theoretical, political and philosophical backgrounds to social research and their implications for research practice and for the use of particular research method. Kothari (2004) explains that research methodology enables a researcher to acquaint himself or herself with the various steps adopted to study the research problem along with the logic behind them. This section discusses the study area, research design, population of the study, sample and sampling technique. Others are data collection procedure, data gathering instruments, validity, pre-testing of research, ethical consideration, fieldwork, challenges on the field and data processing and analysis.

Study Area

The study area was the Sunyani municipality, which is one of the twenty-seven districts in the Brong-Ahafo region in the Republic of Ghana. The municipality was established on the 10th of March, 1989 by a legislative instrument (LI) 1473. This was the period Ghana adopted the District Assembly concept. The Sunyani Municipal Assembly covers a total land area of 506.7 Km^2. It is located at the heart of Brong-Ahafo Region lying between Latitudes 70 20'N and 70 05'N and Longitudes 20 30'W and 2010'W (Ghana Statistical Service, 2014). It is

bordered on the north by Sunyani West District; west, by Dormaa East District; south, by Asutifi District; and to the east by Tano North District.

The Sunyani Municipality has a total population of 123,224 made up of 61,610 males and 61,614 females (Ghana Statistical Service, 2014; Population and Housing Census, 2010). The Municipality is predominantly urban with more than eight out of every 10 persons living in urban areas. The economy of the municipality used to be predominantly agrarian. However, the upsurge of commercial, industrial and service activities depicts potential diversification of the local economy. Currently, the service sector employs majority (58.3%) of the population in the Municipality. There are numerous financial institutions in the Municipality. These comprised banking and non-banking financial institutions such as micro-finance companies.

Notable among the banking and non-banking financial institutions in the Municipality are the Ghana Commercial Bank, Barclays Bank, Zenith Bank, Ecobank, Agricultural Development Bank, National Investment Bank, Fidelity Bank, Sahel Bank, The Royal Bank, Excel Microfinance, Noble Dream Financial Service, and Opportunity Savings and Loan, Private Money Lenders and Susu Groups. These financial institutions help in improving the living conditions of the inhabitants in the municipality by granting loans to desired customers and aiding in investments. The municipality has numerous SME owners or managers engaged in the agriculture and agro-processing, artisans, soaps and detergents making, weaving fabrics, cloth designing and tailoring, textiles and leather works, brewing

beverages, food processing and baking, creative and art industry, wooden furniture processing, assembling electronic products as well as chemical based products.

Study Design

The specific design for this study was cross-sectional research design. According to Olsen and St George (2004), cross-sectional design is a common and well-known study design. A cross-sectional study design involves a snapshot observation of a subset of the population (Sarantakos, 2012). In this type of research study, either the entire population or a subset thereof was selected, and from these individuals, data were collected, to help answer research questions of interest. Cross-sectional study design describes the current nature and conditions that exist (Neuman, 2006). According to Levin (2006), cross-sectional design is employed when the purpose of the study is descriptive. The aim is to describe a population or a sub-group within the population, with respect to an outcome and a set of risk factors. Okurut et al. (2012) and Beck et al. (2008) employed a descriptive design in their studies.

The distinctive features of this design are that it is executed within a limited period; it studies the relationship between different variables at a single point in time and shows how variables affect each other. Cross-sectional design is also useful in assessing practices, attitudes, knowledge, and beliefs of a population in relation to a particular event (Jose, 2014). It is relatively inexpensive and can estimate the prevalence of outcome of interest because the sample is usually taken from the whole population. The limitations of this design are that it is difficult to

make a causal inference and additionally, the design provides different results if another time frame had been chosen and the inability to capture social processes or change, subject to recall bias and observer-expectancy effects (Neuman, 2006).

The cross-sectional design was therefore adopted for the study because as part of its objectives, the study sought to ascertain the risk perception of financial service providers. To explore the opinions, attitudes and beliefs of financial service providers, the study employed both the constructivist and logical empiricist methodology which emphasizes on subjective and objective observation of social phenomena. In line with the literature, the study was of the positivist paradigm and interpretivist paradigm and it was inclined toward adopting a quantitative and statistical method of research as well as a qualitative method of research (Johnson & Christensen, 2008). The mixed approach ensures precise answers to carefully defined questions (Creswell, 2014).

Population of the Study

The population of the study was credit officers of the formal and informal financial institutions and operators of small and medium-scale enterprises in the Sunyani municipality. Small and medium-scale enterprises comprised retailing, wood processing, animal farming, metal works, dressmaking, sawmilling, catering and hairdressing businesses. Formal and informal financial institutions include rural and community banks, savings and loans companies, financial NGO's, co-operative credit unions, 'susu' collectors, development and commercial banks, and micro-finance institutions. For the purpose of this study, the target population

comprised 141 credit officials and 510 SMEs operators and managers. Table 1 shows the population of credit officials under the various financial service providers.

Table 1: Population of Credit Officials of Various Financial Institutions in the Sunyani Municipality

Credit Officials	Population	Credit Officials	Population
Baduman Rural Bank	3	Ghana Commercial Bank	8
Nkoraman Rural Bank	2	Uni Bank	2
Drobo Rural Bank	1	Barclays Bank	3
Nsoatreman Rural Bank	3	Agricultural Development Bank	4
Wamfie Rural Bank	3	SG-SSB	5
Bomaa Rural Bank	1	National Investment Bank	4
Derma Rural Bank	1	Stanbic Bank	4
Capital Rural Bank (4 branches)	8	Ecobank	4
Sinapi Aba Trust	3	UT-Bank	4
Ghana Fin (Bay Port)	3	Sahel-Sahara Bank	4
Fidelity Bank	2	Zenith Bank	4
The Royal Bank	2	Financial NGO's	7
Dalex Finance	2	Susu collectors	8
Smart Micro-Finance	3	Private money lenders	10
First National Bank	2	Brong Ahafo Catholic	
Kaseman Rural Bank	1	Cooperative Society for	3
Opportunity Savings and Loans Int.	2	Development (BACCSOD)	
Ghana National Association of Teachers (GNAT) Credit Union	2	Excel United Micro-finance	3
Big Dreams Micro-finance	3	Jopat Micro-finance	3
Sunyani Municipal Teachers' Co-operative Credit Union Ltd	3	KB Star Micro-finance	3
Sunyani Christians Co-operative Credit Union Ltd	2	Beneficial Micro-finance	3
Best Point Savings and Loans	1	Abosomaketere Credit Union	2
Total	141		

Source: Sunyani Municipal Assembly, (2016)

Table 2 below, shows the population and sample size for various categories of SMEs.

Table 2: Population and Sample Size for SMEs

SMEs	Population	Sample Size
Retailing	100	80
Wood Processing	85	70
Dressmaking	80	66
Hairdressing	60	52
Catering	40	36
Animal farming	30	28
Sawmilling	30	28
Metalworks	25	24
Agro-processing	25	24
Printing works	20	19
Brewery industry	15	14
Total	510	441

Source: Sunyani Municipal Assembly, (2016)

Sample and Sampling Techniques

Multi-stage sampling technique was used for the study. Creswell (2002) states that multi-stage sampling involves the drawing of a sequence of samples from already selected samples so that only last samples of subjects are studied. First, the sampling frame was categorised into two different sets of population namely; credit officers and operators of SMEs. Second, the sampling frame for

credit officers was categorised into credit officers of rural and community banks, savings and loans companies, co-operatives credit unions, Susu collectors, private moneylenders, financial NGOs, development and commercial banks. Credit officers of informal and formal financial institutions were randomly sampled using Microsoft Excel 2016 version. SME operators were sampled in the study to solicit their views on the risk perception embedded in credit delivery.

The names of the credit officers were computed into the excel spreadsheet under the various sub-groupings. Afterwards, the Rand function of the Microsoft Excel 2016 Enterprise edition was used to sort the names and the corresponding samples from the sub-groupings financial service providers. Similarly, SME managers and operators from the various groups of SMEs were categorised into operators of retailing, wood processing, metal works, dressmaking, catering, hairdressing, poultry farming**,** printing and publishing works, brewing and agro-processing. The names of SME operators were obtained from the Sunyani Municipal Assembly (SMA). The respondents from the various categories of SMEs were randomly sampled using Microsoft Excel 2016 version. The Rand function of the Microsoft Excel was used to sort the names and the corresponding samples from the sub-groupings under SMEs.

According to Neuman (2006), three issues motivate a researcher for choosing a sample size. These are the degree of accuracy required, diversity of the population and, the number of different variables to be examined at the same time. In another study, Neuman (2007) indicated that for a small population (under 1000), a researcher needs a larger sampling ratio. He further stated that a larger population

permits smaller sampling ratios for equally good samples. For descriptive research, the sample size should be 10% of the population. However, if the population is smaller, 20% or more may be needed (Gay & Diehl, 1992).

In order to ensure representatives of the sample to the population, 217 SME operators were sampled for the study. This was based on the sample size determination table of Krejcie and Morgan (1970), which states that a population of 510 requires a sample size of 217 at 95 percent confident interval. Out of the 141 credit officers of formal and informal financial institutions, 64 credit officers were sampled for the study.

Data Collection Issues

The nature of the research involved exploring the risk perception of financial service providers. The research sought to examine the gut-level assessment of financial providers such as beliefs, opinions, attitudes, feelings and views in financing small and medium-scale enterprises. Also, the nature of the research requires the identification of risk categories faced by financial service providers as well as the determinants of risk and the differences in risk perception among financial service providers. Researchers have observed that questions that probe into intuitions are amongst the most difficult to answer in the financial communities and the banking sector. Due to that, the sensitive nature of the data was considered a challenge encountered in the data collection. This led to the consideration of the use of primary and secondary data.

Kothari (2004) asserts that secondary data is the one that has already been collected for the purposes other than the problem at hand. It includes both raw data and published summaries. The obvious advantages of using secondary data sources are that these datasets are readily available and accessible to scholars devoid of monetary costs in terms of data collection (Bergold & Thomas, 2012). However, the limitation of using secondary data is that since a third party collects data, there is the likelihood of inadequacies or incompatibilities of the data to the research objectives. Furthermore, I needed to thoroughly study and understand the procedures that were conducted in terms of sampling, data collection, and coding of variables, so that appropriate data analysis procedures were employed.

There were indications to suggest that the primary data would be a more practical alternative in that data collection could be specifically tailored to the objectives of the study and that the results would provide insights to a sample of interest and relevance to me. I, therefore, was assured of data quality. In consideration of the pros and cons of using primary data, the obvious choice of data source was primary data. From the empirical review Okurut et al. (2012), Beck et al. (2008), Bruns and Fletcher (2008) and Wabo (2014) all incorporated primary data in their studies.

The assessment of the datasets was generally guided by the suitability of the data to meet the three main research objectives. Three main aspects of the data that were deemed crucial to fulfil the research objectives were data regarding risk perception in formal and informal financial institutions, the various determinants of risk, types of risk and risk management strategies. Aided by questionnaires and

interview schedules, I first collected basic demographic information. Data on types of risk, determinants of risk, risk perception and credit risk management techniques were collected from credit officials and managers or operators of SMEs. I also conducted interviews with managers of financial institutions to ascertain their views, opinions, attitudes, and perceptions about the risk management techniques used to evaluate SMEs.

Data Collection Instruments

Questionnaires were used to collect data from credit officers of formal and informal financial institutions. Credit officers answered the questionnaires because they are perceived to be literate and capable of responding to the questions themselves. The questionnaires were structured into four sections; section A solicited data on the characteristics and background information of the financial institutions, section B covered the types of risks and risk perception faced by financial service providers, section C sought data on the determinants of credit risk, and section D gathered data on risk perception in formal and informal financial institutions. The background section considered issues such as gender, the level of education, age of respondents, types of financial institution, the category of SMEs that the financial institution deals with and the position of the financial service provider.

Issues considered under the section on the types of risk and included types of risk faced by financial service providers, types of credit risk faced, types of risk significant to the performance and sustainability of financial institutions, risk

factors considered when lending to SMEs, whether all the types of risk faced are overlapped or interrelated. Issues considered under the risk perception in formal and informal financial institutions included types of financial institutions; opinions about how risky SME financing is; differences in beliefs, attitudes, and risk perception among financial service providers; determinants of interest rates; collateral substitutes; screening and monitoring of borrowers; factors to consider when setting interest rates; whether interest rates are set higher; and how borrowers feel about the changes in interest rates. The section on determinants of risks captured issues such as sources of credit risk, whether lending to SMEs is risky or not, the leading source of credit risk, moral hazard problems, and financial incentives to employees of financial institutions.

All sections of the questionnaires comprised close-ended and open-ended items. The close-ended items were appended with a set of possible responses, which respondents either selected only one or a multiple of responses, as in multiple response questions. The set of possible response was informed by literature in the area of study.

The interview schedule was used for the operators of SMEs because they were perceived to be largely illiterate and thus will need assistance to administer the instruments. This approach guarded against any possible misunderstanding or misinterpretation of the items in the instrument, which might lead to erroneous conclusions. The interview schedule was structured into four sections; section A gathered data on the characteristics of SMEs and background information, section B covered the types of risks faced by financial service providers, section C sought

data on determinants of risk, and section D solicited data on SMEs characteristics and credit risk. The study combined both numeric scale and Likert-scale and the instrument combined both close-ended and open-ended items. However, the close-ended items were more as compared to the open-ended items. Open-ended items provided explanations into issues, whereas the close-ended items were used to guide the respondents in the answering of the items.

Measurement of Variables

The dependent variable for the study is risk perception in financing. Risk perception in financing was measured using a vague quantifier. Survey response options that are inexact in quantity have been called vague quantifiers to emphasise the imprecision of their meanings (Walonick, 1994). However, Baghal (2011) argues that numeric responses used in measuring risk perception are suboptimal and therefore, an alternative way to measure risk perception is a qualitative scale providing vaguely quantified risk options similar to a study on smoking risk perceptions conducted by (Slovic & Peters 1998). For instance, a vague quantifier phrase such as very risky, somewhat risky, a little risky, or not at all risky will be appropriate in measuring risk perception in financing.

A study by Baghal (2011) reveals that a number of respondents do not answer with logically consistent responses to subjective probability measures using numeric scales among respondents with lower cognitive abilities. The independent variables comprised age of firm, the size of the firm, the gender of the owner of the firm, educational level of owner and collateral. The age of the firm was measured

in terms of the number of years the firm has been in operation. The size of the firm was measured in terms of the number of employees, total assets, and turnover. Gender of the owner may be either male or female. The educational level was measured in terms of the highest level of education attained by the owner of the firm. Collateral was measured in terms of the capital structure or the assets possession of the firm.

Pre-Test

The survey instruments were pre-tested in the Cape Coast Metropolis in the Central Region of the Republic of Ghana. I considered the Cape Coast Metropolis because it harbours numerous financial service providers and SME operators. Secondly, I considered the Cape Coast Metropolis because it has similar conditions to the target population. The pre-test helped in checking the appropriateness of questions, the response rate and how well the research objectives would be addressed. In addition, the pre-test enabled me to obtain some assessment of the questions' reliability and validity of the data collected as well as their suitability. The pre-test helped correct ambiguities and poorly worded questions and aided me to familiarise myself with the research environment and gain useful information on the population.

Ethical Considerations

Pilot and Hunger (1999) state that ethics is a system of moral values that is of great concern. For this reason, a number of ethical issues were taken into

consideration. The purpose of this study was strictly, to contribute to existing knowledge in the financial sector and promotes the activities of SMEs. A letter of introduction was sought from the School for Development Studies of the University of Cape Coast. In conformity with the University of Cape Coast standards, respondents' confidentiality and anonymity were assured in any classified information provided for the study. This study was designed in such a way that it did not pose any threat whatsoever, or had the potential of posing any threat to the respondents. The respondents' informed consent was sought. For moral and legal reasons, respondents were not coerced into participating in the social research.

The respondents were given enough information about the research to make an informed decision about whether to participate or not. The right to privacy is the individual's right to decide when, where, to whom, and to what extent his/her attitude, belief and behaviour would be revealed. I ensured the respondent's right to privacy by guaranteeing anonymity and confidentiality. In addition, I ensured that the exchange of information by the respondents did not harm the respondent in any form. All scholarly works and data consulted in any form or format were duly acknowledged in the reference section.

Field Work

Four Research Assistants were recruited and briefed on the purpose of the study and plan for the administration of instruments. The research assistants were also taken through the research instruments to ensure common understanding and interpretation of the research items. The fieldwork was conducted between 14th

June and 28th June, 2017. I scheduled appointments with the credit officers of the formal and informal financial institutions. I introduced myself to the bank managers to secure their consent and readiness for data collection exercise.

The questionnaires were given to them and they were asked to indicate the duration they were likely to use to fill the questionnaire. The duration was recorded against the names of the institutions. Subsequent visits were done based on the stated durations to retrieve the questionnaires. The survey team also introduced themselves to the operators of the SMEs, the purpose of the study and the time likely to be used for the interviewing. After securing their consent, the instruments were administered.

Data Management and Analysis

Data analysis, according to Cohen, Manion and Morrison (2007), involves organising, accounting for, and explaining the data collected. The data collected from the field was first cross-checked and edited to ensure that there are accurate responses and the information given was relevant before it was computed for analysis. Before processing the responses, the data was coded and a data file was created in SPSS (Statistical Product and Service Solution) version 21 for data entry, editing, cleaning, analyses and presentation. The results were summarised and presented as follows.

Objective one was achieved through frequencies and charts to explore the types of risk and risk perception in the formal and informal financial institutions. The second objective was analysed with logistic regression analysis to assess the

determinants of perceived credit risk. With respect to the relationship between SMEs' characteristics and perceived credit risk, objective three was analysed with Chi-square test of independence for categorical variables such as collateral value, sex of owner and educational status of owner, and for continuous variables such as the size of the firm, and age of firm, correlation analysis was used to establish the relationship that exist between the variables. Further, logistic regression was used to determine the SME characteristics that happens to be the best predictor of credit risk.

Theoretical Econometric Model

The probability to default is modelled as:

$$Y_i = X_i\ \beta + ui \quad (1)$$

Where Xi is a vector of exogenous explanatory variables; .

μi is a stochastic error term and β is a vector of parametersHowever, in a binary outcome model, the dependent variable yi takes one of these two values: $Y =$

$$\begin{cases} 1 & if\ firm\ i\ default \\ 0 & otherwise \end{cases} \quad (2)$$

The logit model is systematically specified below: Beginning from a Linear Probability Model (LPM):

$$Pi\ (y = 1/X) = P\ (y = 1/X1 + X2 + \ldots + XK) \quad (3)$$

Pi is the probability that a firm will default;

X1, X2 … Xk denote explanatory variables.

y =1 means the event does occur (the firm defaulted) *;*

y =0 means the event does not occur (the firm has not defaulted)

The LPM above assumes that pi (y=1/x) increases linearly with X i.e. the marginal or incremental effect of X remain constant throughout. This seems impracticable since most economic variables tend to be nonlinearly related. Moreover, since *E*(y=1/x) in linear probability models measures the conditional probability of an event occurring given X, it must necessarily lie between 1 and 0. Although this is true apriori, there is nothing in the procedure that guarantees that ***ŷi,*** the estimators of the estimated probabilities E(y/x) will necessarily fulfill this restriction, and this is the real problem with OLS estimation of the LPM. The more common and practical procedure is to model the probabilities by some distribution function other than the cumulative normal.

The logit model which uses Cumulative Distribution Frequency (CDF) to model regressions where the response variable is dichotomous, does not only guarantee that the estimated probabilities fall between the logical limits 0 and 1 but also ensures that the relationship between Pi and Xi is nonlinear.

Then the logistic model specifies that the probability of a firm to default is given by

$$\boldsymbol{P_i}\left(\boldsymbol{Y}=\frac{\mathbf{1}}{\boldsymbol{X_i}}\right) = \frac{\boldsymbol{\exp(x\beta)}}{\boldsymbol{1+exp^{(x\beta)}}} \qquad (4)$$

The equation implies that the probability of a firm to default (1-P_i) can be written as

$$1 - P_i = \frac{\mathbf{1}}{\boldsymbol{1 + exp^{x\beta}}} \qquad (5)$$

We can, therefore write

$$\frac{P_i}{1-P_i} = \frac{exp^{(x\beta)}}{1+exp^{(x\beta)}}\left(\frac{1+exp^{x\beta}}{1}\right) = exp^{x\beta} \qquad (6)$$

$\frac{P_i}{1-P_i}$is simply the odd ratio (OR) in favour of defaulting firms

the ratio of the probability that a firm will default to the probability that a firm will not default. The odds ratio is equal to$exp^{(x\beta)}$.

Taking the natural log of equation (6) gives the logit model as specified below.

$$L_1 = 1n\left(\frac{P_i}{1-P_i}\right) = Z_i = \beta_1 + \beta_2 X_i + U_i \quad (7)$$

The full regression equations are represented below:

In our model, we postulate that the probability of default is influenced by the following factors: Appraisal of loans (APL), Governance and Management Control (GMC), Screening and Monitoring (SCM), Credit Policies (CRP), Interest Rates (INTR), Credit Assessment (CRAS) and Financial Incentives (FINI). With respect to the probability of default from the SME perspective, the following factors were modelled: Inflation rate (INFR), Government interference (GOVI), Time of disbursement of loan (TDL), Diversion of funds (DIVF). Staff extortion (STE), while owner-manager and firm characteristics such as Gender of Owner (GENO), Educational Status (EDUSTA), Age of firm (AGE), Size of firm (SIZE) and Collateral value (COLVA) were also modelled.

From equation (7), the empirical estimation model is given by

CRPfsp= β0 + β1APL + β2 GMC + β3 SCM + β4 CRP + β5 INTR + β6 CRAS + β7 FINI + μ (8)

CRPsme= β0 + β1GOVI + β2INFR + β3INTR + β4STE + β5TDL + β6BRV + β7DIVF + μ (9)

CRPsme= β0 + β1 GENO + β2 EDUSTA + β3AGE + β4 SIZE + β5 COLVA + μ (10)

Table 3: Definition, Measurement of Variables

Variables	Description of variable	Expected sign of relationship	Relevant Literature
Dependent variable			
Risk Perception	A vague quantifier to represent very risky, somewhat risky, a little risky	(+/-)	Baghal (2011)
Perceived credit risk	A dichotomous variable to represent the potential that a borrower will default or non-default	Positive (+/-)	IFC (2014),
Explanatory variables			
Age	The age of the firm is measured in years the firm has been in operation.	Negative (-)	Abor and Quartey (2010)
Educ	The educational level is measured in terms of the highest level of education attained by the owner of the firm.	Negative (-)	Rwagesira (1994)
Collateral value	Collateral is measured in terms of the capital structure or the assets possession of the firm.	Negative (-)	Organisation for Economic Cooperation and Development (2013)
Size of firm	A continuous variable to represent the number of employees.	Negative (-)	Abor and Adjasi (2007) Ghana Statistical Service (2010)
Sex	A dummy variable to represent sex of SME operators. =1 if SME operator is male. = 0 if SME operator is female	Negative (-)	De Aghion and Murdoch (2005)
Int rate	Continuous variable to represent rate of interest charged on loans	(+/-)	IFC (2009), Tagoe et al. (2005)

Expected Signs of the Explanatory Variables

Variable	Expected Sign
Appraisal of loans	-
Governance and Management Control	_
Credit Policies	-
Credit Assessment	-
Financial Incentives	-
Inflation rate	_
Monitoring and banks regular visit	-
Time of disbursement of loan	+
Government interference	-
Diversion of funds	+

Source: Field data (2017)

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter presents the results of the field work and the discussions to determine how financial service providers perceive small and medium enterprises (SMEs) to be risky and so charge high-risk premiums as compensation in the Sunyani Municipality. This chapter is divided into two main sections. Section one presents the demographic characteristics of the respondents. The risk homoeostasis theory, principal-agent theory and credit rationing theory underpin the study. Questionnaires were used to collect data from 64 credit officers drawn randomly from commercial banks, development banks, rural banks, microfinance banks, credit unions, Susu companies and private money lenders in the Sunyani Municipality.

In addition, an interview schedule was also used to collect data from 217 SMEs operators drawn randomly from the Sunyani Municipality. The sample size varied for different aspects of the analysis and different statistical tools were used to analyse the data. At the preliminary stage, descriptive statistics such as frequencies and percentages were used to analyse the characteristics of the credit officials and SME operators. The analysis was done based on the objectives of the study. The socio-demographic characteristics of respondents begin the discussion.

Characteristics of Financial Service Providers

This section examines the characteristics of the financial service providers based on the nature of the variables. The variables include the position of the respondents, type of institution, categories of SMEs that form part of clientele as well as the concentration of SMEs. In total, 101 questionnaires were distributed and 64 responses were received, leading to a response rate of 63 percent. Babbie and Mouton (2004) have noted that 63 percent is regarded as an acceptable response rate in social research surveys. In addition, 217 SME owners and managers responded to the interview schedule, representing 100 percent response rate.

The position of the respondents in the Sunyani Municipality consists of 15.6 percent branch managers, 62.5 percent credit officers and 21.9 percent relationship managers. From the above description, it can be revealed that the majority of the respondents in this study are those directly involved in the processing and disbursement of the loans to the Small and Medium Enterprises (SMEs). With respect to the types of financial institutions, out of the 64 respondents, 76.6 percent were from the formal financial institutions, while 23.4 percent respondents were from the informal financial institutions. Equally important, the credit officers' opinions were sought to determine their SME clients in the Sunyani Municipality. From the findings, the majority of the respondents (96.9%) indicated that they have SME operators among their clientele.

Credit officials were asked to indicate whether they have a separate unit that manages SMEs clientele. From the responses, approximately 41 percent of the credit officers responded that they have a deliberate focus on the SME segment of

the economy. According to Abor (2014), this focus is informed by a considered strategic decision to enhance their development of the SME market, increase their penetration, and improve their respective positions in a market that is believed to have significant commercial potential. However, the majority (59.4%) of the credit officers indicated that they do not have a deliberate focus on the SME segment of the economy.

In terms of the location of SME clients, the views of the respondents were sought. From the findings, the study reveals that 59.4 percent of the SMEs operators that form part of the financial service providers' clientele are concentrated in the urban areas, while 29.7 percent of SMEs clientele are concentrated in the rural centres and 10.9 percent of SMEs clientele reside in the Peri-urban areas. This is not surprising because statistics from GSS (2014) summary report of the Population and Housing Census (2010) reveal that the Municipality is predominantly urban with more than eight out of every 10 persons living in urban areas.

Table 4: Distribution of Multiple Responses on Category of SMEs that form part of Clientele (In Percentages)

Category of SME (N = 217)	Response to item		
	Yes	No	Total
Retailing	95.3	4.7	100.0
Agro processing	68.8	31.2	100.0
Dressmaking	56.3	43.7	100.0
Animal farming	57.8	42.2	100.0
Catering	56.3	43.7	100.0
Hairdressing	53.1	46.9	100.0
Metal works	50.0	50.0	100.0
Wood processing	46.9	53.1	100.0
Other	40.6	59.4	100.0

Source: Field data (2017)

Table 4 shows the multiple response on category of SMEs that form part of the financial institutions' clientele. The retailing category constitutes the principal economic sector that their SME banking business is exposed to. From the findings, majority (95.3%) of the credit officials noted that retailing form part of the SME clientele, while 68.8 percent of them indicated that the agro-processing businesses form part of their clientele and 57.8 percent of the respondents alluded that animal farming businesses form part of their clientele.

The next issue pertains to the reasons for credit officers to have these categories of SME operators as clientele. As shown in Table 5, 29.7 percent of the credit officers indicated that their SME clientele are reliable, while 21.9 percent of the respondents attest to the fact that their SME clientele are accessible, 17.2 percent of the credit officials indicated that they are not limited to providing funds to SME operators.

Table 5: Reasons for SME Clientele

Reasons	Frequency	Percent
Reliable	19	29.7
Accessible	14	21.9
Not limited to SMEs	11	17.2
Ability to pay	10	15.6
Safe	8	12.5
low risk clientele	2	3.1
Total	64	100.0

Source: Field data (2017)

The respondents' share of loans to SMEs was sought to ascertain the growth of loans to SME in the Sunyani Municipality. From the findings, 32 percent of the credit officers revealed that the nature of share of loans to SMEs was progressively increasing. In accordance with the present results, previous studies of Aryeetey

(2005) as well as Beck and Demirguc-Kunt (2006) have demonstrated that share of loans to SMEs have increased progressively in developing economies. Furthermore, 27 percent of the credit officials indicated that the share of loans to SMEs was increasing. It was revealed that the minimum share of loans to SMEs was three percent and the maximum value was 90 percent. The mean share of loans to SMEs was 34.29. This finding is consistent with the International Financial Corporation (2013) finding of the financing of SMEs and the share of loans to SMEs in developing economies which is equivalent to 30 to 36 percent of current outstanding SME credit.

The growth rate of SMEs account was also sought. This was very imperative because it has the tendency of increasing the financial inclusion of SMEs vis-à-vis lowering the high risk of default (IFC, 2013). From the findings, the majority (81.3%) of the credit officials indicated that the growth rates of SME account were increasing, while approximately 14 percent of the credit officials revealed that the SME accounts were decreasing progressively. The respondents were asked to indicate the type of involvement that they have with SME operators. This is relevant because financial service providers' perception of SME needs is formed through their knowledge of the volumes of product or service enquiries or requests that they (financial institution) received from customers classified as SMEs.

According to IFC (2013) report, it is believed that for SME financial inclusion to be increased, it is expected that financial products and services availed to the SME market must be "tailored" to suit the peculiar needs of the players in that sub-economy. From the findings, 63.4 percent of credit officers indicated that

the SMEs needed financial advice. This finding is in agreement with Mensah's (2004) findings which showed that financial advice has the tendency of reducing loan defaults. Equally important, 27.3 percent felt that SMEs needed the kinds of products that will help them to grow, while 9.4 percent of the respondents indicated that the SMEs needed supervisory role.

In response to the credit product that financial institutions offer to SMEs, the opinions of the credit officers were sought. From the findings, it would seem that credit products are the most popular with financial institutions, as 100 percent of credit officers interviewed had noted that credit products (Short-term loans, medium and long-term loans) constitute the main product types that they offer or sell to SMEs.The need for short-term credit is driven by the fact that most SMEs use their loans to finance recurrent expenditure incurred in the day-to-day running of their businesses (Prempeh, 2015). This compares to the smaller percentage (33%) of credit officials that alluded that lease financing and distributorship credit represents the institution's product that they sell to SMEs. The findings of the current study are consistent with those of De la Torre, Pería and Schmukler (2010) that short-term, medium and long-term loans constitute the main product that are offered to SMEs.

Types of Risks and Risk Perceived by Financial Service Providers within the Formal and Informal Financial Institutions

The first objective explored the types of risks and risk perceived by respondents' institution. The basis for the identification of risk is embedded in Bank for International Settlement (2005) and Oliyide's (2012) argument that, in

performing financial intermediation role, financial service providers are exposed to a variety of risks. These types of risks are categorized into interest rate risk, foreign exchange risk, compliance risk, market risk, liquidity risk, operational risk, and credit risk. From the findings, credit risk (84.4%) appears to be the most cited in the Sunyani Municipality. The findings observed in this study mirror those of the previous studies of Van Gestel and Baesens (2009) in United Kingdom that have examined that credit risk is the largest risk that financial institutions face in the course of their business operations. Foreign exchange risk (3.1%) was least cited in the Sunyani Municipality.

From the conceptual framework, the kind of risk significant to the performance and sustainability of financial institutions was sought. As shown in Table 6, credit risk (87.2%) was the most cited risk affecting the performance and sustainability of financial institutions in Sunyani municipality, while legislative risk (4.7%) and foreign exchange risk (3.1%) were least cited. In accordance with the present results, previous studies of Afriyie and Akotey (2012) as well as Kolapo et al. (2012) have demonstrated that among other risks faced by financial service providers, credit risk plays an important role in financial providers' financial performance since a large amount of financial providers' revenue accrue from loans from which interest margin is derived.

Key informants at Derma Rural Bank and Ecobank indicated that among all the risk faced, credit risk is the core pillar affecting profitability and sustainability of institutions. Therefore, in mitigating the risk of default, due diligence are exercised by the managements . However, collateral securities are requested to

compensate the high risk of default. This observation is in line with the risk compensation theory which stipulates that financial service providers typically charges high interest rates to offset the risk of default of SMEs.

Table 6: Distribution of Multiple Responses on Kind of Exposure Significant to the Performance and Sustainability

Types of Risk (N = 217)	Response to item		
	Yes	No	Total
Credit risk	87.5	12.5	100
Liquidity risk	26.6	73.4	100
Market risk	26.6	73.4	100
Interest rate risk	14.1	85.9	100
Compliance risk	12.5	87.5	100
Legislative risk	4.7	95.3	100
Foreign exchange risk	3.1	96.9	100
Total			

Source: Field data (2017)

The next issue pertains to the credit officers' opinion about whether all the risk faced were interrelated or overlapped. From the findings, 84.4 percent of the credit officers indicated that the risks faced are interrelated and overlapped. This finding is similar to Oliyide's (2012) finding in Nigeria which showed that all risk are interrelated and overlapped, while 15.6 percent of the credit officers denied that the risks faced are interrelated or overlapped.

With respect to the default rates on loans to SMEs relative to large enterprise, the views of the respondents were investigated. It can be seen from Table 7, that 71.9 percent of the credit officers indicated that it is indeed costly, from the

angle of portfolio profitability, to service the SME economy, compared to larger corporate enterprises since the default rates on loans to SMEs relative to larger enterprises were very high. This finding is consistent with the Bank of Ghana (2016) report that indicates the high default rates of SMEs and the need to deal with non-performing loans of SMEs. However, approximately eight percent of the credit officials revealed that default rates on loans to SMEs relative to large enterprises were equivalent.

Table 7: Default Rates on Loans to SMEs Relative to Large Enterprises

Default rates	Frequency	Percent
Very high	46	71.9
No, they are lower	8	12.5
They are equal	5	7.8
No answer	5	7.8
Total	64	100.0

Source: Field data (2017)

In terms of the ratio of non-performing debts of SMEs relative to large enterprise, the views of the respondents were sought. As shown in Table 8, about 70.3 percent of the credit officers alluded that the ratio of non-performing debts of SMEs relative to large enterprise was very high. The present findings seem to be consistent with the findings of Bank of Ghana (2016) report in Ghana concerning the increasing spate of non-performing loans in financial service provider's loan portfolio and the need to deal with non-performing loans. This finding is also in agreement with the findings of Beck et al. (2008) that SMEs have an increasing spate of non-performing loans comparative to larger businesses, while a few

(14.1%) of the credit officers noted that the non-performing loans of SMEs relative to larger enterprises were lower.

Table 8: Ratio of Non-Performing Debts of SMEs Relative to Large Enterprises

Ratio	Frequency	Percent
Very high	45	70.3
No, they are lower	9	14.1
No answer	6	9.4
They are equal	4	6.2
Total	64	100.0

Source: Field data (2017)

Credit officers were asked for their opinion on the riskiness of loans to SMEs in the Sunyani Municipality. From the findings, the majority (75%) alluded that SMEs loans are riskier. From the conceptual framework, it can be deduced that the high-risk perception is bound to be factored into the determination of lending rates to SMEs borrowers based on the risk compensation theory (IFC, 2009; Kwambai & Wandera, 2013). However, a few of the respondents (25%) indicated that the risk of loans to SMEs loans were lower.

To ascertain the problems that credit officials face in their credit delivery, the view of the respondents were sought. From the findings, the majority (79.4%) of the credit officials indicated that there is information asymmetry from SME borrowers when lending, and 89.1 percent of credit officers noted that most SME operators do not have collateral security to enable them secure loans. Approximately, 67 percent of the credit officers alluded that the inherent risk

related to the SME sector is a major concern when lending to SMEs. These findings are in conformity with the findings of Cassar and Holmes (2003) and International Financial Corporation (2009) as well as Mensah (2004) and Tagoe, Nyarko and Anuwa-Armah (2005) that financial service providers are averse in lending to SMEs due information asymmetry, higher risk perception and high transactional cost.

The hazards that financial service providers face when lending to SMEs was looked into. As shown in Table 9, the majority of the credit officers cited that they take into consideration the availability of collateral (87.2%), borrowers' loans with other banks (90.6%), and 3Cs of credit namely character (90.6%), capacity to pay (90.6%) and condition (90.6%) before loans were approved. As indicated in the conceptual framework the above mentioned hazards inform credit officers on the appropriatness of credit risk management strategies to be used.

Table 9: Distribution of Multiple Responses on Hazards Considered When Lending to SMEs

Types of Hazards (N = 217)	Response to item		
	Yes	No	T otal
Loans with other banks	90.6	9 .4	100.0
Capacity to pay	90.6	9.4	100.0
Character	90.6	9.4	100.0
Availability of collateral	87.2	12.5	100.0

Source: Field data (2017)

This study produced results which corroborate the findings of a great deal of the previous work of Soares, Pina, Ribeiro and Lopes (2011) that in dealing with

the risk of lending, criteria including the 3C's, 4C's or the 5C's of credit which are character or reputation, capital or leverage, collateral, capacity, and condition are assessed. As indicated in the risk compensation theory, mechanisms used in dealing with risk is key. The nature of the risks embedded in disbursing loans to borrowers necessitate high-risk premiums and collateralization of loans.

The credit officials' opinions were sought to ascertain how SMEs contribute to risk. From the findings, majority (89.1%) of participating credit officers reported having assessment of how SMEs contribute to risk. This finding is consistent with findings of past studies of Bruns and Fletcher (2008) in Sweden which assessed that larger percentage of SMEs contributes to risk. A few (10.9%) of the respondents however, reported that they do not have an assessment of how SMEs contribute to risk.

With respect to how to mitigate the risk of default in SMEs, the credit officers were engaged to solicit their views. From Table 10, it can be seen that loan appraisals (100%), monitoring (98.4%), regular visits (100%), and request for guarantor (100%), advisory service (96.9%), as well as savings account (96.7%) were the most cited mechanisms for mitigating SME credit risk in the Sunyani Municipality. These observations are in agreement with the findings of Golin and Delhaise (2013) that the mechanisms for mitigating credit risk include pledging of collateral, third-party credit guarantee, use of credit rating and collection agencies risk-based pricing and the use of covenants.

Table 10: Distribution of Multiple Responses on Mitigating SME Credit Risks

Mitigating risk (N = 217)	Response to item		
	Yes	No	Total
Loan appraisal	100	0	100.0
Banks regular visit	100	0	100.0
Request for guarantor	100	0	100.0
Monitoring	98.4	1.6	100.0
Advisory service on whether business is thriving	96.9	3.1	100.
Opening savings account	96.7	3.3	100.0
Total			

Source: Field data (2017)

Interviews with the key informants of Ecobank and GN Bank confirmed that credit risk management is key to profitability. According to the key informant of GN Bank, "… *we have successfully designed and are implementing appropriate tools and systems that enable us to accurately identify early when an SME's business is changing in a manner that heightens default or similar or related risks" (*S. Agyemang, personal communication, June 14, 2017*).*

Also, the key informants of Derma Rural Bank indicated that "… *among all the risk faced, credit risk is most significant to the profitability and sustainability. Therefore, in mitigating the risk of default, the management exercise due diligence in the delivery of credit"* (E. Marfo, personal communication, June 14, 2017). As indicated in the conceptual framework, collateral securities are requested to compensate the high risk of default. The views of the key informants support the risk compensation theory which stipulates that high-risk premiums are charged to reduce the risk of defaults of SMEs.

Interview with the key informants of Ecobank indicated that *"... the credit default of SMEs is mitigated through the requisition of cash collaterals and revealed that the rate of interest charged on loans are not fixed, but rather take into consideration the risk profile of SMEs and policy rates as a basis for the determination of interest rates"* (E. Mantey, personal communication, June 14, 2017).

With respect to the procedure used in appraising loan portfolio, the views of the respondents were solicited. This is vital for eliminating financial losses. In credit delivery, Anjichi (1994) confirms that credit appraisal is the heart of quality loan portfolio. Similarly, Chelagat (2012) confirms that credit risk inherent in SMEs occurs when there is a weak appraisal of loans which can lead to delinquencies. As embedded in the conceptual framework, risk management involves credit appraisal. The findings of the study revealed that the appraisal process involves the following steps: seeking the purpose of the loan; availability of financial statement; collateral; valuation of security; and site visitation.

From the findings, with the exception of the availability of financial statements which was not unanimous, all the key informants from the institutions indicated that they sought the purpose of the loan, collateral, valuation of security, and visited the sites of loan applicants. It confirms the perceived credit risk in the theory of risk compensation that the loan applicant's risk profile needs to be appraised.

In response to how credit risk management function is organized in financial institutions, the respondents' views were solicited. From the conceptual framework,

credit risk management is key to the firms' sustainability. Out of the total number of financial institutions surveyed, 90.6 percent of the credit officials confirmed that they have delegated management at head office to deal with specific risk profiles to support SME business. This finding is in agreement with Bruns and Fletcher's (2008) finding in Sweden which showed that management has delegated lending officers who decide on SME credit, however 95.3 percent of the credit officers indicated having used due diligence in risk management functions.

The credit officers' views were sought concerning the use of scoring models. This is to measure the lending decision by the loan officers pertaining to the credit proposition. Out of 64 credit officers who responded to the questionnaires, 35.9 percent indicated that their institution uses scoring models in credit appraisal of prospective SME borrowers. These findings further support the idea of Allen, Delong and Saunders (2004) that these models allow lenders and regulators to develop techniques that rely on portfolio aggregation to measure credit risk exposure, while the majority (64.1%) of the respondents revealed that they do not use scoring models.

The opinion of the credit officers' who use the scoring model in credit proposition was sought to ascertain the reasons for the use of the scoring model for credit appraisal. Of the 64 participants who responded to this question, 10 credit officers reported that the reason for using scoring models was due to the bank-specific decision. The findings observed in this study mirror those of the previous studies of Dinh and Kleimeier (2007) that identified those borrower characteristics that should be part of a credit scoring and how the model can be calibrated to

achieve the strategic objectives of the bank, while 54 of the credit officers noted that the reason for using scoring model was basically affected by the institution's regulation.

To measure the weight that the credit officers assign to scoring pertaining to the credit proposition, the views of the credit officers were sought. The results were based on respondents' rating on the overall bank lending practices and criteria in relation to the approving and rejection of credit proposition. The mean score of the respondents was 70.29 with a standard deviation of 16.55. The minimum score given to SME operators was 2, while the maximum score was 80. The credit officers alluded that the loan will be approved if the score is above the cut-off point. This is very much dependent on the type of deviation which requires overriding from the top management. Even though sometimes the credit score is less than the cut-off point of the score, the loan will still be approved because of some obvious reasons like government directives to promote growth in SME sectors. These results agree with the findings of Dinh and Kleimeier (2007) in Vietnam as well as Mester (1997) that credit scoring involves assigning weight to credit propositions of prospective borrowers.

The variables used in credit scoring were looked into. From the findings, credit officials alluded that years of operation, collateral, capacity, turn over stocks and capital were the most cited variables used in credit scoring of SME borrowers. The findings of this study mirror those of Ochung (2013) that credit-scoring systems utilize information relating to the traditional 5Cs of credit namely; character, capacity, collateral, conditions and capital. Similarly, this relation

corroborates the findings of Abraham and Zhang (2013) and Mapleton (1987) that identified four C's of assessing credit-worthiness to include character, capacity, capital and conditions.

Credit officers were asked to indicate whether they rely on qualitative assessment in credit appraisal if scoring models are not used. Out of the 64 credit officials, the majority (85.9%) used qualitative assessment. Issues that they focused on were viability of business collateral, location of business and credit worthiness. The findings observed in this study mirror those of the previous study of Mutezo (2013) in South Africa that have examined the qualitative assessment known as psychometric testing which has successfully been used by banks in Chile and Argentina, while a bank in South Africa has successfully adopted it in a pilot study for determining credit-worthiness of borrowers. These findings further support the idea of Mutezo (2013) that qualitative assessment uses attributes such as business skills, integrity, viability of business and intelligence to assess the credit-worthiness of borrowers.

The use of quantitative assessment by credit officials was investigated. With respect to the credit officers that use quantitative assessment in their institutions, what they look out for are net assets, profitability ratio, turn over and current ratio. The finding of this study is consistent with the study done in Vietnam by Dinh and Kleimeier (2007) as well as Mester (1997) that quantitative variables used in credit assessment takes into consideration monthly income, outstanding debt, financial assets, how long the applicant has been in the same job, whether the applicant has defaulted or was ever delinquent on a previous loan, whether the applicant owns or

rents a home, and the type of bank account the applicant has are all potential factors that may relate to loan performance and may end up being used in the scorecard.

Studies have shown the relative importance of quantitative and qualitative credit assessment. For instance, studies by Soares et al. (2011) have shown that qualitative criteria, particularly management's experience and reliability has a significant negative correlation with banks' default records.This indicates that the use of qualitative information mitigates the information problems present in lending activity, leading to lower levels of overdue credit.

Monitoring of credit risk outlook for each particular SME as shown in the conceptual framework is imperative to reduce the risk of loss of an obligator's non-payment of loans and other credit lines. To ascertain the mechanisms for monitoring the credit risk outlook of each particular SME, the views of the credit officials were sought. With the exception of credit referencing bureau which was not unanimous, all the key informants from the institutions indicated that they monitor through regular visits, stock inspection and valuation of contracts. In accordance with the present results, previous study of Chikomba et al. (2013) in Zimbabwe have demonstrated the need for financial service providers to regularly monitor the status of borrowers and re-evaluate individual credits and commitments.

As in indicated in the conceptual framework, the risk opinions, judgment and beliefs about the financing of SMEs in the formal and informal financial institutions were sought in the Sunyani Municipality. From the findings, 54.7 percent of the credit officers alluded that indeed there are differences in judgment, beliefs and opinions about SME financing and SME sector, while 45.3 percent of

the credit officers noted that there are no differences in beliefs and judgment about the SME sector.

The respondents' in the formal and informal financial institutions opinion about the riskiness of financing SMEs was investigated. From the findings, majority (79.7%) of the credit officials in formal financial institutions indicated that the financing of SMEs is very risky. With (67%) officials of formal financial institutions opined that their thought, judgement and feelings about the SMEs sector are highly risk. The riskiness of financing SMEs in this study corroborates the ideas of IFC (2009), Mensah (2004) as well as Tagoe et al. (2005) that financing of SMEs is risky as compared to larger enterprises. The results are in line with the risk compensation theory indicating that high risk premiums are charged to compensate the high risk of default of SMEs. However, 20.3 percent of the respondents in the informal financial institutions indicated that financing SMEs is a little risky.

Financial service providers were asked to indicate the factors that influence their lending rates. The options were borrower default risks, cost of funds, Bank of Ghana policy rate, interest rate with other banks, currency instability costs due to inflation rate and reserve requirement costs. With the exception of reserve requirement costs which was not unanimous, all the key informants from the institutions indicated that the risk profile, cost of funds, BOG policy rate, interest rates with other banks and inflation rate influence their lending rates. This is in line with the conceptual framework that formal and informal financial service providers takes into consideration these factors for their lending rates.

Equally important, the credit officers' opinions were sought to ascertain whether they live in areas where their SME client reside. From the study, the majority (75.5 %) of the respondents indicated that they reside in areas where their clients live. These results match those observed in earlier study of Aryeetey (2001) that the mechanism used in dealing with risk includes the intimacy of clients, while 24.5 percent of the credit officers noted that they do not live in areas where their clients reside.

In terms of collateral substitutes required by credit officials to mitigate the risk of default, out of 64 credit officials, 73.4 percent of formal financial providers alluded that they often search for a collateral substitute to lower the risk of default. These results contracdicts earlier studies of Pham and Lensik (2007) that financial service providers especially those in the informal sector usually search for collateral substitute to lower the risk of default, while 26.6 percent of informal financial service providers indicated that they do search for collateral substitutes.

Correspondingly, the type of collaterals required by credit officials was also investigated from the credit officers. From the study, the majority (73.4%) of the credit officers indicated mortgages, landed properties, vehicles, machine and equipment, cash collaterals, stocks and receivables as the collateral. The views of Bruce-Twum and Adu-Darko (2013) are supported that collateral substitutes such as mortgages, cash collaterals, vehicles and machines are required to lower the risk of default.

The rate of interest charged on the loans and advances to compensate the high risk of default was investigated by the researcher. From the study, the majority

(70.3%) of the credit officials in formal financial institution alluded that interest rate charged per the base rate to compensate the high risk of default was high. The findings observed in this study mirror those of the previous studies of Dela Torre, Martinez Peria and Schmukler (2009) and IFC (2009) as well as Bawumia, Ofori and Belnye (2005) in Ghana that have indicated that financial service providers typically charge higher interest rates. These results are also in line with the risk compensation theory indicating that high risk premiums are charged to compensate the high risk of default of SMEs. Equally important, 29.7 percent of the respondents in the informal financial institutions noted that the interest rates on loans are high.

In terms of how the customers feel about the interest rates charged on the loans, majority (60.9%) of the credit officials noted that the interest rates charged on loans are somewhat okay, while 39.1 percent of the credit officials indicated that their interest rates are seen to be high by their customers. The credit officials were asked whether the interest rates charged on the loans discourage or encourage their SME borrowers. From the findings, the majority (65.7%) of the credit officials alluded that the interest rates charged on the loans encourages their SME borrowers, while 34.3 percent of the respondents confirm that interest rates charged on loans discourage their customers.

Determinants of Perceived Credit Risk

The second objective sought to determine the factors that contribute to the perceived credit risk. This section will foremost examine the factors that causes credit risk from the supply side and afterwards discuss the factors that causes credit

risk from the demand side or SMEs perspective. In line with the conceptual framework and as indicated in the risk compesation theory, the determinants of risks include appraisal of loans, interest rates, inflation rates and among others.

The study examined the principal source of risk among the credit officers in the Sunyani Municipality. From the study, 48.4 percent of the credit officers indicated that the leading source of risk was weak appraisal of loans, while 25 percent of the credit officers cited poor credit assessment as the main source of risk and 23.4 percent of the credit officers noted that the principal source of risk was unstable interest rate. These results match those observed in earlier study of Chelagat (2012) who found that credit risk inherent in SMEs occurs when there is weak appraisal of loans which can lead to delinquencies.

The views of the credit officers were solicited to determine why SMEs borrowers defaults on loans. From the finding, 64.1 percent of the respondents confirmed that the loans disbursed were diverted from the purpose for which the loan was secured, while 29.7 percent of the respondents confirmed that, the loans disbursed were used for the purpose for which the loan was secured. A possible explanation for the diversion of loans may be due to poor monitoring and irregular banks' visits undertaken by the credit officials to monitor customers. The findings of the current study are consistent with that of Kaaya and Pastory (2013) who showed that poor screening and monitoring are the reasons for inferior loan portfolio.

With respect to the moral hazard problems, the credit officers indicated that the funds diverted reduces profitability. From the findings, more than half (67.2%)

of the credit officials reported that the diversion of funds by borrowers to other projects results in the inability of the borrowers to repay the loans, while 32.8 percent of the credit officers revealed that the diverted funds by the SME borrowers reduce profitability.

The respondents' views were sought on the incentives provided by their management in the Sunyani Municipality. The key informants indicated that they were provided attractive salaries, fuel allowance, car allowance, utility allowance, medical care, phone credits, and free lunch. In accordance with the present results, previous study of Chinwe and Duaka (2015) have demonstrated that adequate financial incentives provided to employees of financial institution have a strong tendency to curb opportunism and moral hazards. Financial incentives motivate financial service providers to avoid lending to poorly performing firms and individuals with questionable credit records.

In similar vein, the credit officers were requested to indicate whether the financial incentive provided are adequate or not. From the responses, 56.3 percent of the credit officials revealed that the incentives provided were adequate to avoid reckless lending, while 43.8 percent of the respondents confirm that the financial incentives provided were inadequate.

In order to examine the problem of lending to poorly performing firms, the views of the credit officials were gathered. From the findings, it appears that 65.6 percent of the credit officers confirm that they do not approve credit to poorly performing firms, thus reflecting the views of Chinwe and Duaka (2015) and World Bank (2012), while 34.4 percent of the respondents confirmed to have approved

credit to poorly performing firms. The reason given by the credit officers who approved credit to poorly performing firms was that some firms perform poor in their initial stage, but later improve as the business progresses and so the need to approve their credit propositions.

With respect to the mechanisms for safeguarding against lending to poorly performing firms, the key informants revealed that the mechanism for safeguarding against reckless lending were checks put in place by the relationship manager, review of loan applicants by senior members at head office and checks by the risk manager. This study produced results which corroborate some of the findings of Richard et al. (2008) that the mechanisms such as checks by officers and review of loan applicants at head office are used to minimize risk.

Numerous investigations have been conducted to provide explanations to the issue of perceived credit risk among financial service providers and shed light on the sources of credit risk in small and medium enterprises (SMEs). The main sources of credit risk as indicated by Breuer, Jandacka, Rheinberger and Summer (2010), as well as Nijskens and Wagner (2011), as illustrated in the conceptual framework include an appraisal of loans, governance and management control, screening and monitoring, interest rate, credit assessment, credit policies and financial incentives to employees.

Before performing the actual logit regression, preliminary analyses were performed to ensure that there were no violation of assumptions of normality, homoscedasticity and collinearity. Logistic regression does not assume a linear relationship between the dependent and independent variables. The dependent

variable must be dichotomous (2 categories). In this study, I modelled the probability that a firm will default or non-default. The outcome variable considered in the study is perceived credit risk. Their values are captured by the help of dummies such as 1 and 0. The variable is given 1 if at least one of those SME borrowers defaults and 0 if there is no default.

Table 11: Test of Multicollinearity

Variables	Tolerance	VIF
Appraisal of loans	.851	1.175
Governance and management control	.809	1.237
Screening and monitoring	.538	1.858
Credit policies	.671	1.491
Interest rates	.611	1.637
Credit assessment	.407	2.456
Financial incentives to employees	.607	1.647

Source: Field data (2017)

Multicollinearity test (Table 11) was also performed to find out if the independent variables included in the estimation are not related. It can be detected using the variance inflation factor (VIF) or correlation matrix. A tolerance value lower than 0.1 is comparable to a VIF of 10. This indicates that a variable could be considered as linear combinations of other independent variables if the tolerance level is lower than 0.1 or if the VIF is greater 10. Kutner, Nachtsheim and Neter (2004) propose a VIF of 10. All the VIF values were less than 10 and this suggests that there is no problem of multicollinearity.

Table 12: Variables in the Equation Credit Risk (Financial Service Providers' Perspective)

Variables	B	S.E.	Wald	Sig.	Exp (B)
Appraisal of loans	-1.208	.841	2.063	.151	.299
Governance and management control	.032	.741	0.02	.965	1.033
Screening and Monitoring	-.198	1.019	.038	.846	.820
Credit policies	-2.597	1.215	4.569	.033	.075
Interest rates	-2.756	1.161	5.641	.018	.064
Credit assessment	-1.035	1.252	.683	.408	.355
Financial incentives	1.373	1.123	1.494	.222	3.946
Constant	11.766	4.016	8.582	.003	128741.886

Source: Field data (2017)

Table 12 presents the results of logistic regression analysis performed on credit risk as dependent variable and seven independent variables: appraisal of loans, governance and management control, screening and monitoring, interest rate, credit assessment, credit policies and financial incentives to employees. In the classification table, the overall percentage of correctly classified cases is 68.8 percent. In this case the data suggest that majority of SME borrowers would default based on the contractual agreement because there was higher percentage of respondents answering No to the question of whether the loan was honoured based on the contractual agreement. From the model, the omnibus test of coefficient or goodness of fit' test was significant at p = 0.007, with a chi-square value of 23.365 with 7 degrees of freedom.

MacFadden (1979) contends that R^2 values of between 0.2 and 0.4 represent a good fit of the model. The model specification is therefore good, given by the pseudo R square statistics and significant chi-square for prediction squared. The Cox & Snell R Square and the Nagelkerke R Square values are .306 and .430, suggesting that between 30.6 per cent and 43.0 per cent of the variability in credit risk is explained by this set of predictor variables. The model correctly predicts 97.7 percent of default and 45 percent of non-default. Overall, the model predicts 81.3 percent of the credit risks correctly, an improvement over the 68.8 per cent in Block 0.

From the Wald test, credit policies (z = 4.569; p-value = 0.033) and interest rate (z = 5.641; p-value = 0.018) are the variables that contribute significantly to the predictive ability of the model. The implication is that the major factors influencing credit risk are credit policies and interest rates. Appraisal of loans, governance and management control, screening and monitoring, credit assessment and financial incentives did not contribute significantly to credit risk.

The negative sign for interest rates indicates that high interest rates lowers credit risk compared to low interest rates. The estimated coefficient of the interest rates indicates that a unit increase in the interest rate leads to a decrease of 0.064 of the odds that a firm will default on loans. The confidence interval for the Odds Ratio (OR) for interest rate varies from 0.007 to 0.168, implying that we can be 95 percent confident that the actual value of OR in the population lies between 0.007 to 0.618. The confidence interval does not contain the value of 1, therefore this result is statistically significant at $p < .05$.

The outcome of this study is consistent with IFC's (2013) findings that high interest rate lowers credit risk. This outcome also supports the findings of Stiglitz (1990) that higher interest rates should be imposed on credit facilities when it is identified that the probability of default is higher. The explanation is that SME operators are cautious about the risk of default and so do not borrow huge sums of money that will invariably affect their loan repayment.

Credit policy is also a significant predictor, according to the sig. value (p=.033). The negative sign of this variable indicates that increased credit policy, lowers the likelihood to credit risk. The estimated coefficient of credit policies indicates that a unit improvement in the credit policies leads to a decrease of 0.075 of the odds that a firm will default. This indicates that, the better the credit policies instituted, the less likely an SME operator is to report to have defaulted on a loan. For every extra improvement in credit policies, the odds of SME operator to default on loans decreases by a factor of .075, all other factors being equal. In accordance with the present results, previous studies of Breuer et al. (2010) as well as Nijskens and Wagner (2011) have demonstrated that inappropriate credit policies results in increased credit risk.

All the other variables (appraisal of loans, governance and management control, screening and monitoring, credit assessment and financial incentives) met their expected signs, even though they were statistically insignificant.

In line with objective two, this section examines the perceived credit risk from the SMEs perspective. From the conceptual framework, the preference for credit emanates from different sources including formal and informal credit.

Respondents were asked to indicate their preference over the types of credit. The aim was to assess the sources of credit SME operators prefer. Thus, the preference of SME operators over sources of credit may indicate the kind of experience and their perceptions of the various credit sources. The results are presented in Table 13.

Table 13: Types of Credit Preferred

Type of credit	Frequency	Percent
Bank credit	183	84.3
Non-bank credit	18	8.3
Susu credit	7	3.2
Private lenders	2	.9
Suppliers credit	7	3.2
Total	217	100.0

Source: Field data (2017)

As shown in Table 13, most (84.3%) of the respondents preferred bank credit. The preference of SME operators for bank credit over non-bank source, according to Agbozo and Yeboah (2012), may be attributed to the special credit packages for SMEs, favourable conditions mostly attached to credit guarantees schemes and lower interest rates. Furthermore, respondents were requested to indicate whether they had ever borrowed to finance their businesses. From the study, about half (50.2%) of the SME operators admitted to borrowing to finance their business. The implications are that almost half of the SME operators always raise internal funds to finance their businesses. The findings of the current study

are consistent with those of Addaney, Awuah and Afriyie (2016) as well as Mensah (2004) that most SMEs borrow to finance their businesses.

With respect to those who have never borrowed, 52.3 percent did not need loans, while 40 percent could not meet the requirements. Sources, where SME operators borrowed to finance their business, were also examined by the study. Figure 2 shows the sources from which SME operators borrowed to finance their business activities, and it can be seen that 67 percent of the respondents borrowed from the bank, while 31.2 percent borrowed from credit unions. The results show that formal financial institutions play a critical role in financing the SME activities in the Sunyani Municipality. In accordance with the present results, a previous study by Abor and Quartey (2010) has demonstrated that formal finance plays a key role in SME activities.

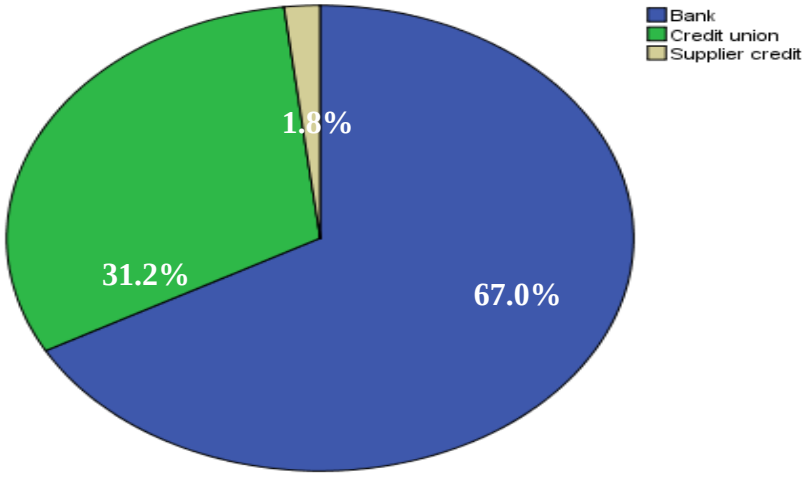

Figure 2:**Sources of Bank Finance**

Source: Field data (2017)

The study further examined the number of times that respondents have applied for a loan as well as the number of times they have been successful in securing the loan. The aim was to assess the ability of SME operators to meet the

credit condition of financial service providers due to high-risk perception (De la Torre, Pería & Schmukler, 2010). The study found that the number of times respondents had applied for loans varied from one to four with a mean of 1.4 (SD = 0.626). The results show that some SME operators have been successful in their attempts to secure loans to finance their businesses. The results also indicate that more loan applications from SME operators were not approved (Awuitor, 2016). The responses on how regular SME borrowers repay loans on time were sought. From the findings, 64.6 percent of the respondents disclosed that they service their loans on time, while the remaining 35.4 percent accepted that, they default repayment occasionally.

Beneficiaries of the loans were asked to indicate whether they were able to pay back their loans on time, and how they generated money to repay the loans. These were essential to examine the ability of the entrepreneurs to utilize funds in their businesses to generate additional resources to repay their loans on time (Mensah, 2004). The finding shows that the majority (64.6%) of the beneficiaries of the loan were not able to repay on time. These findings further support the idea of IFC (2013) as well as Bawumia et al. (2005) that most SME borrowers were unable to meet the financial obligation, however a few of the beneficiaries (35.4%) were able to meet loan repayment schedule.

The study further examined the reasons why beneficiaries of loan were unable to meet loan repayment schedule. From the findings, approximately half (50%) of those surveyed indicated that they were unable to meet loan repayment schedule due to spending on ward's school fees, while 25.3 percent of the

respondents indicated poor sales and 24.7 percent of the respondents cited spending part of the loans on sick relatives. This finding conforms to the finding of Mensah (2004) as well as IFC (2013) that most SMEs are unable to meet the loan repayment schedule. As indicated in the risk compensation theory, the moral hazard problem informs the financial service providers to charge high-risk premiums to compensate the risks of default.

Diagnostic Test

Multicollinearity test was performed to find out if the independent variables included in the estimation are not related. It can be detected using the variance inflation factor or correlation matrix. Using SPSS, multicollinearity test was carried out and the results indicated that there was no problem of multicollinearity in our data and that; all variables could be included in the model.

Table 14: Multicollinearity Test

Variables	Tolerance	VIF
Government interference	.559	1.788
High inflation rate	.819	1.221
High interest rate	.374	2.671
Time of disbursement	.853	1.172
Bank regular visits	.400	2.499
Staff extortion	.549	1.822
Diversion of funds	.629	1.589

Source: Field data (2017)

Table 15: Variables in the Equation Credit Risk (SMEs)

	B	S.E.	Wald	Sig.	Exp(B)
Government Interference	.100	.411	.060	.807	1.106
Inflation rate	-1.996	.465	18.406	.000	.136
Interest rate	-1.035	1.454	.507	.477	.355
Time of disbursement	2.923	.482	36.786	.000	18.589
Bank regular visits	-3.252	.728	19.960	.000	.039
Staff extortion	-.354	.427	.687	.407	.702
Diversion of funds	.244	.718	.116	.734	1.277
Constant	7.240	5.941	1.485	.223	1394.90

Source: Field data (2017)

Table 15 presents the results of a direct logistic regression analysis performed on credit risk as dependent variable and seven independent variables: government interference, inflation rate, interest rate, time of loan disbursement, bank regular visits, staff extortion and diversion of funds. From the output, it is observed that the model can correctly predict 93.8 percent of default and 90.8 percent of non-default. Overall, the model predicts 91.7 percent of the credit risks correctly an improvement over the 68.9 per cent in Block 0. From the model, the chi-square value for the Hosmer Lemeshow Test is 101.208 with a significance level of 0.000.

According to MacFadden (1979), the R^2 values of between 0.2 and 0.4 represent a good fit of the model. The model specification is therefore good, given by the significant chi-square for prediction squared. The Cox & Snell R-Square and the Nagelkerke R Square values are .511 and .718, suggesting that between 51.1 per cent and 71.8 per cent of the variability is explained by this set of variables. The chi-square value is 147.530 with 7 degrees of freedom.

The variables that contribute significantly to the predictive ability of the model include inflation rate (z = 18.406; p= 0.000), time of disbursement of loans (t = 36.786; p= 0.000) and banks regular visits (z = 19.960; p= 0.000). The major factors influencing credit risk are inflation rate (0.000), time of disbursing the loan (0.000) and the banks regular visits (0.000). Government interference, interest rates, staff extortion and diversion of funds did not contribute significantly to credit risk.

Inflation rate is a significant predictor, according to the significant value. The odds ratio for inflation rate, however, is .136, a value less than 1. The negative sign of this variable indicates that high inflation rate is associated with lower credit risk. The estimated coefficient of the rate of inflation indicates that a unit increase in the inflation leads to a decrease in the odds that a borrower will default. The findings of the current study are consistent with those of Hansen et .al (2012) that the high pricing of loans appears rational, given the expected inflation. The high expected inflation stimulates growth in businesses which helps to increase profit margin hence, lower default rate.

Time of disbursing the loan (p = 0.000) is a significant predictor of credit risk. The positive sign of the coefficient for this variable indicates that the longer the time of disbursing the loan, the higher the credit default risk. More specifically, a unit increase in the time of disbursing the loan results in an increase of 18.589 in the odds that a borrower will default.

The model indicated a significant (p = 0.000) inverse relationship (b= -3.252) between banks regular visits and credit risk. An increase in monitoring and

regular visits by banks would decrease the probability of default by SME operators, all other factors being held constant. A unit increase in the bank regular visits leads to a decrease in the odds that a borrower will default. The findings of the current study are consistent with those of Chikomba et al. (2013) in Zimbabwe as well as Mori and Richard (2012) in Tanzania that regular monitoring of borrowers reduces credit default risk.

All the other variables (Government interference, interest rates, staff extortion, and diversion of funds) met their expected signs, but were statistically insignificant.

Small and Medium-Sized Enterprises' Characteristics and Credit Risk

The third objective examined the relationship between SMEs characteristics and credit risk in the Sunyani Municipality. This section will foremost examine the characteristics of the SME operators, afterwards correlation analysis would be employed to determine the relationship between SMEs characteristics and credit risk, whiles logistic regression would be used to model the owner-manager characteristics such as gender of owner, educational status of owner as well as firm characteristics such as age, size of firm and collateral value.

The variables include sex, educational level, type of enterprise, type of business ownership as well as business registration, number of years of operation, number of workers and whether SME operators belong to credit associations. The study used a total of 217 SME owners and managers that were drawn from the Sunyani Municipality, consisting of 65 percent of SME owners and 35 percent of SME managers.

The GSS (2014) summary report of the PHC (2010) report reveals that females represented 50.1 percent more than males (49.9%) in the Municipality. In this study, among the respondents included in the study, 45.2 percent were males while 54.8 percent were females. This is consistent with the finding of Abor and Quartey (2010) that majority of SMEs are female-owned businesses, which more often than not, are home-based, compared to those owned by males. The level of education of respondents was also sought. Table 16 gives a distribution of the respondents' level of education.

Table 16: Educational Level

Level of Education	Frequency	Percent
None	11	5.1
Basic	60	27.6
Secondary	111	51.2
Tertiary	31	14.3
Higher	4	1.8
Total	217	100.0

Source: Field data (2017)

Out of 217 respondents, 27.6 percent had completed JHS and majority (51.2%) of SME owners and operators had completed SSS/GCE/O level, while 14.3 percent had completed tertiary. Approximately five percent do not have any educational background and the rest (1.8%) had completed higher degree.

The study collected data from different types of enterprises who had businesses in the Sunyani Municipality. As seen in Table 17, more (46.5%) of the SMEs are in retailing with the least (2.3%) in hardware business. This finding is consistent with Fisher and Reuber's (2000) that SMEs are mostly engaged in retailing, trading, or manufacturing. The finding is also consistent with Abor and Quartey's (2010) that the majority of SMEs in Ghana fall into the retailing category.

Table 17: Types of Enterprise

Types of Enterprise	Frequency	Percent
Retailing	101	46.5
Hairdressing	50	23.0
Animal farming	25	11.5
Sawmilling and wood processing	15	6.9
Dressmaking	9	4.1
Metal works	6	2.8
Catering	6	2.8
Hardware	5	2.3
Total	217	100.0

Source: Field data (2017)

The study further examined the formalization of businesses of the SMEs. Out of the 217 respondents, 69.2 percent of the operators confirmed that their business was registered, while 30.8 percent were not registered. The findings of the current study do not support the previous research finding of Muteti (2005) in Kenya that most SMEs are unregistered. The mean age of the SME operators was 36 years with a standard deviation of 9.751 years indicating that majority of the respondents were still in the economically active age.

The minimum number of workers started with was one, while the maximum numbers of workers started with was 22. The mean number of years of operating the enterprises was 9 with a standard deviation of 6.190. The range of years of operation is from 1 to 18 years. Similarly, the mean number of workers SME operators started with was 4 with a standard deviation 3.335, while the mean current

number of workers was 5 with a standard deviation of 3.930. The results show that the number of workers in the SMEs have increased over the years, which signifies an expansion of enterprises.

A paired sample t-test was used to test for significance difference between the number of workers SME operators started with and the current number of workers. From the Appendix C, a p-value of 0.000 implies that there was a significant difference between the number of workers SME operators started work with and their current number of workers. The results show that the mean difference between the number of workers SME operators started work with and their current number of workers are statistically significant. Some of the reasons cited as the cause of the increase in the number of workers were increased demand from customers, expansion of business, improved technology, increased capital, and increased productivity.

However, some SME operators suffered a decline in the number of workers. The reasons were a loss of working capital, low demand for goods, lack of financial assistance to expand the business, and pilfering. The implication is that the above reasons play important roles in financial service providers risk perception in financing SMEs in the Sunyani Municipality.

Figure 3 shows the type of business ownership of the SME operators and managers in the Sunyani Municipality. Out of the 217 respondents, the majority (82.4%) of the SME operators were operating in one person business, while 17.6 percent were in partnership. This finding is consistent with the findings of Abor and Quartey (2010) in Ghana as well as Muteti's (2005) in Kenya that most SMEs

operate in one-person businesses. According to Berger and Udell (2002), the type of business ownership influences the ease with which SMEs secure financial assistance from financial service providers as well as the risk of securing such loans. The largest employment category is working proprietors. This group makes up more than half the SME workforce in most developing countries.

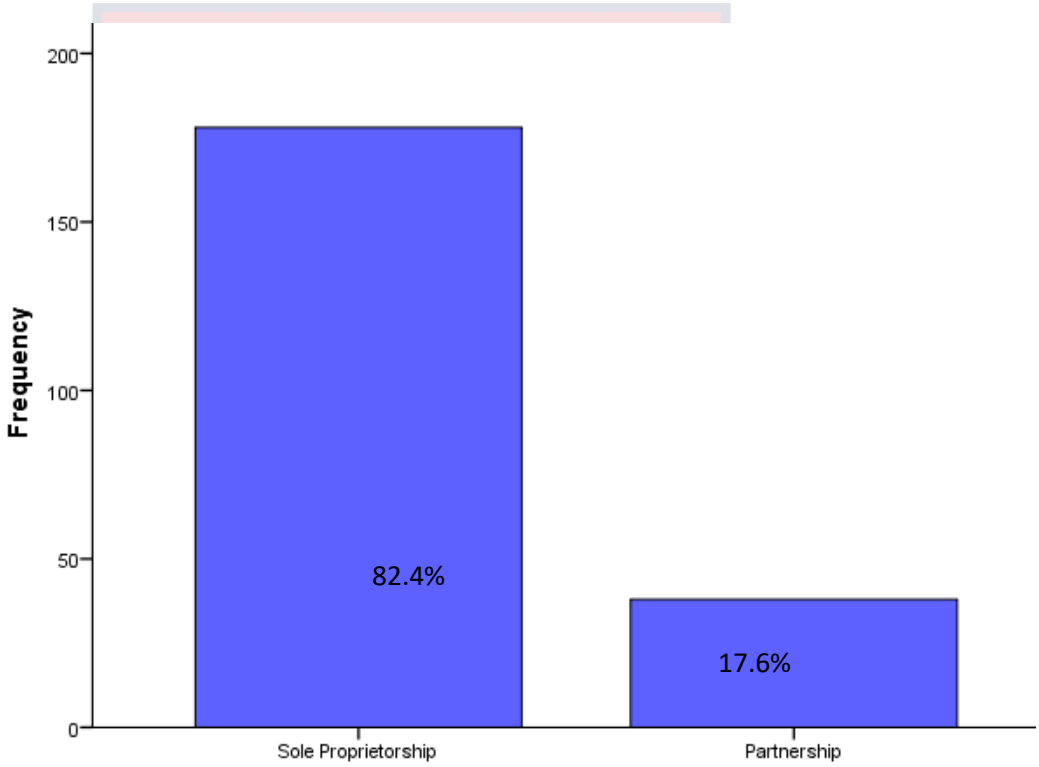

Figure 3: **Types of Business Ownership**

Source: Field date (2017)

As a result of the risk and difficulty in securing loans from financial service providers, some institutions have devised means to make it easier to lend financial assistance to SMEs. According to Atieno (2001), one of such strategy is the formation of credit associations. Proprietors of SMEs join such associations to qualify for and secure financial and sometimes technical assistance to expand their

businesses. The study found that 67.6 percent as against 32.4 percent of the SME operators belonged to credit associations.

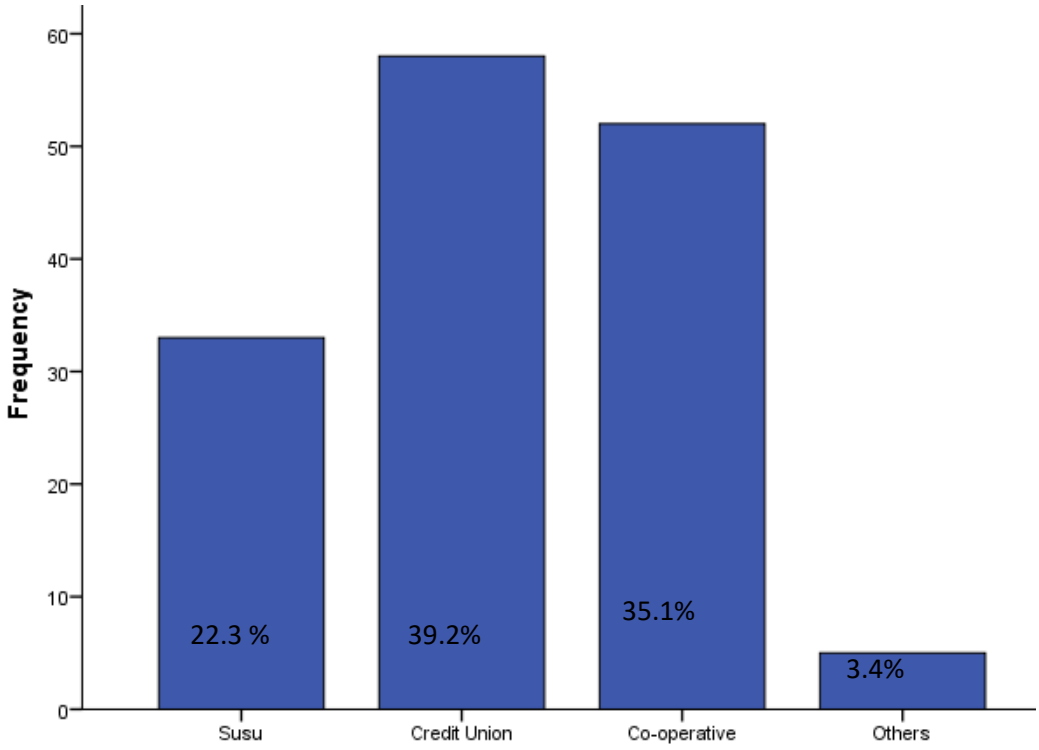

Figure 4: **Types of Credit Association**

Source: Field date (2017)

Figure 4 shows the type of credit association that the SME operators prefer. Out of 217 SME operators, 22.3 percent belonged to susu groups, 39.2 percent belonged to credit unions, while 39.2 percent of the SME operators belonged to co-operative. The implication is that these associations would lower the risk and augment the SMEs in securing loans from financial service providers. (Mensah, 2004; Saunders & Allen, 2010). The findings observed in this study mirror those of Aryeetey (2005) that examined financial and technical assistance to SMEs.

As shown in the conceptual framework with firm characteristics at the right below credit risk management strategies, continuous variables such as the size of the firm, and age of firm were analysed with Pearson product moment correlation coefficient. Chi-square test with lambda as statistic was used to measure the association between educational status and credit risk because educational status is an ordinal variable, while credit risk is a nominal variable. Correspondingly, chi-square test with Phi coefficient was used to analyse the association between collateral value and credit risk as well as gender and credit risk because both variables were nominal.

The relationship between firms' age as measured by the number of years in operation and credit risk as measured as the potential of a borrower to default or non-default in terms of loan agreement, was first investigated using Pearson product moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. The correlation result is presented in Table 18.

Table 18: Correlation between Firms Age and Credit Risk

		Credit risk	Firms Age
Credit risk	Pearson Correlation	1	-.680**
	Sig. (2-tailed)		.000
	N	217	215
Firms Age	Pearson Correlation	-.680**	1
	Sig. (2-tailed)	.000	
	N	217	217

****.** Correlation is significant at the 0.01 level (2-tailed).

Source: Field data (2017)

As noted from Table 18, there is a strong but negative significant relationship between firms age and credit risk (r = -.680, p < .01). Thus, older firms are associated with lower credit risk. The explanation to this is that SME operators that have been in operation for a longer period are viewed as an indicator of a firm's quality, since longevity of the firm may provide a signal for survival ability and quality of management as well as the accumulation of reputational capital (Diamond, 1991). This finding corroborates the ideas of Boyle et al. (1992) as well as Sachs and Cohen (1982) that older borrowers are more risk-averse, and therefore, less likely to default.

Table 19: Correlation between Firms Size and Credit Risk

		Credit risk	Firms size
credit risk	Pearson Correlation	1	-.092**
	Sig. (2-tailed)		.177
	N	217	217
firms size	Pearson Correlation	-.092**	1
	Sig. (2-tailed)	.177	
	N	217	217

Source: Field data (2017)

As noted from Table 19, there is a large but negative correlation between firms size and credit risk (r = -.092, p > 0.01). Thus, as the size of the firm increases, credit risk decreases. The explanation to this is that larger firms have lower credit risk. The relationship observed between firms size and credit risk is consistent with studies by Schiffer and Weder (2001) in USA, World Bank (2005) as well as Gabriel (2015) that smaller firms have higher risk and as such have a higher rate of failure compared to large firms.

The association between gender of owner and credit risk was investigated using chi-square test of independence. From the chi- square test ($\chi^2(1) = .024$, p =0.878) there is no statistically significant association between gender and credit risk. This is because the p-value of .878 is larger than the acceptable error of margin of .05. This means that the proportion of males that default is not significantly different from the proportion of females that default. The findings of the current study do not support the previous research of Schmit (2004) in Belgium that default rates on loans for women segment are lower compared to male segments. This relation also contradicts the finding of Marrez and Schmit (2009) in Belgium that the default rates for women segments are lower compared to male segments and as such the loss rate is lower for women than for men.

The association between collateral and credit risk was investigated using chi-square test with Phi coefficient. From the Chi- square test, a p-value of 0.00 (X^2 = 62.783, df = 1) with Phi coefficient = .615, and a p < .000, indicated a strong significant positive association between collateral value and credit risk, Thus, an increase in collateral value is associated with higher credit risk. The relation observed coroborates the findings of Saurina (2004) that collateralized loans have a high possibility of default, because financial service providers tend to trust the borrowers with secured loans and hence, have fewer incentives to undertake adequate screening and credit assessment.

The observation of the study that collateral used associates positively with credit risk also supports evidence from past research by Manove, Padilla and Pagano (2001) that more collateral implies more non-performing loans or greater

probability of default. In the context of moral hazard, Boot, Thakor and Udell (1991) also find that riskier borrowers pledge more collateral. Jiménez and Saurina (2004) predict that the amount of collateral pledged is directly proportional to the borrowers difficulties with repayment.

This finding contradicts the association between collateral value and credit risk as indicated by Menkhoff et al. (2012) in Northeastern Thailand that collateral obviously serves to reduce the lender's risk. Thus, collateralization reduces the problems of adverse selection and moral hazard. The association observed between collateral value and credit risk refutes the proposition that collateral can be a sign of default risk. Thus, the probability of default is very low for loans that a house, for example, serves as collateral. This is because of the fear of the borrower losing the house and hence, high loan repayment (Gup & Kolari, 2005).

The association between educational status and credit risk was investigated using chi-square test with lambda as statistic. The findings indicated a moderate significant, but positive association between the educational status of SME operator and credit risk. From the Chi-square independence test, a p-value of 0.00 ($\chi^2(4) = 61.261$, $p = 0.000$) shows that there is a statistically positive but moderate significant association between the levels of education of SME operators and credit risk. This is because the p- value of 0.00 is lesser than the acceptable error margin of 0.05. The lambda value = .285, $p < .05$. The implication is that differences in the level of education determine borrowers potential to default. Thus, SME operators with different levels of education were equally capable of defaulting on loans.

This relation supports the findings of Reta (2000) that educational level is positively related to credit risk. The observation of the study that educational status positively influenced credit risk is in contrast to evidence from past research of Sackey (2005) that borrowers with high level of education have lower credit risk since they occupy higher positions with high-income levels.

Table 20: Test of Multicollinearity

Variables	Tolerance	VIF
Age in years	.743	1.345
Sex	.749	1.336
Educational Level	.702	1.424
Firm size	.869	1.151
Collateral value	.701	1.427

Source: Field data (2017)

Multicollinearity test (Table 20) was also performed to find out if the independent variables included in the estimation are not related. It can be detected using the variance inflation factor (VIF) or correlation matrix. A tolerance value lower than 0.1 is comparable to a VIF of 10. This indicates that a variable could be considered as linear combinations of other independent variables if the tolerance level is lower than 0.1 or if the VIF is greater 10. Kutner, Nachtsheim and Neter (2004) propose a VIF of 10. All the VIF values were less than 10 and this suggests that there is no problem of multicollinearity.

Logistic Regression Results

Table 21, presents the results of a direct logistic regression analysis performed on credit risk only as dependent variable and five independent variables: Firm's size, Gender of owner, Age of firm, Educational status of owner and collateral value.

Table 21: Logistic Regression Results

Variables in the Equation (Owner-Manager/Firm Characteristics)					
	B	S.E.	Wald	Sig.	Exp(B)
Firm size	-1.342	.571	5.532	.019	.261
Gender of owner	-.103	.301	.116	.733	.902
Firm age	-.131	.056	5.449	.020	.877
Educational status	.168	.057	8.593	.003	1.183
Collateral value	2.709	.570	22.606	.000	15.018
Constant	-2.180	1.659	1.727	.189	.113

Source:Field data (2017)

McFadden (1979) contends that R^2 values of between 0.2 and 0.4 represent a good fit of the model. The model specification is therefore good, given by the insignificant chi-square for prediction squared. Hosmer-Lemeshow is also insignificant, and this indicates a good model fit. Correct classification is also satisfactory. The Cox & Snell R-Square and the Nagelkerke R Square values are .386 and .555, suggesting that between 38.6 per cent and 55.5 per cent of the variability is explained by this set of variables. The chi-square value is 79.979 with 5 degrees of freedom.

The variables that contribute significantly to the predictive ability of the model include firm's size (z =5.532; p= 0.019), firm's age (z = 5.449; p= 0.020), educational status (z = 8.593; p= 0.003) and collateral value (z = 22.606; p = 0.000). Gender of owner, did not contribute significantly to credit risk.

Firm's age varies inversely with credit risk. The negative sign of this variable indicates that younger firms are more likely to default compared to older firms. The firm's age is statistically significant at 5%. The estimated coefficient of the age of firm indicates that a unit increase in the years of a firm leads to a decrease of 0.877 of the odds that a firm will default. The possible explanation for this is that, as firm ages, the greater the capital structure and financial strength. This view is supported in an earlier study by Jiménez (2003) that firms that have been in operation for a longer period have lower credit risk. Correspondingly, Maziku (2012) reports that firms in existence between 2-6 years carry highest bankruptcy risk, whereas long success cannot be expected before seven years after birth.

Firm's size is a significant predictor, according to the Sig. value. The odds ratio for firm's size, however, is .261, a value less than 1. The negative sign of this variable indicates that small firms are more likely to default compared to older firms. The estimated coefficient indicates that a unit increase in the firm's size leads to a decrease in the odds that a borrower will default. Thus, as the size of the firm increases, credit risk decreases. The relationship observed between firms size and credit risk is consistent with studies by Schiffer and Weder (2001) in USA, World Bank (2005) as well as Gabriel (2015) that smaller firms have higher risk and as such have a higher rate of failure compared to large firms.

Collateral value is expected to increase the propensity to default, all other things being equal. While the results in the logit model confirm this claim, the positive sign of the coefficient for this variable indicates that the higher the collateral value, the higher the credit risk. This variable is significant at 5%. Thus, an increase in collateral value is associated with higher credit risk. More specifically, a unit increase in the collateral value results in an increase of 15.018 in the odds that a firm will default. There are theoretical arguments by Manove, Padilla and Pagano (2001), supporting the possibility that more collateral, implies more non-performing loans or greater probability of default. Previous research study by Saurina (2004) confirms that collateralized loans have a high possibility of default, because financial service providers tend to trust the borrowers with secured loans and hence, fewer incentives to undertake adequate screening and credit assessment.

This finding contradicts the association between collateral value and credit risk as indicated by Menkhoff et al. (2012) in Northeastern Thailand that collateral obviously serves to reduce the lender's risk. Thus, collateralization reduces the problems of adverse selection and moral hazard. The association observed between collateral value and credit risk supports the proposition that collateral can be a sign of default risk.

Educational status is also a significant predictor, according to the sig. value (p=.003). The positive coefficient of this variable indicates that SMEs entrepreneurs with higher levels of education tend to default more than those with lower levels of education. This variable is significant at 5%. Thus, a 1% increase in

the educational status has 1.183 odds in favour of credit risk. Thus, SME operators with different levels of education were equally capable of defaulting on loans. This relation supports the findings of Reta (2000) that educational level is positively related to credit risk. The observation of the study that educational status positively influenced credit risk is in contrast to evidence from past research of Ayayi (2012) that borrowers with a high level of education have lower credit risk since they occupy higher positions with high-income levels.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This last chapter contains the summary of the study findings, conclusions drawn from the study, recommendations, limitations and areas for further research. The chapter is divided into two main sections. The first section focuses on presenting a summary of the entire study. This will be followed by the conclusions and recommendations. The second section dwells on the limitation of the study and suggestion for further research.

Summary

Spurred in by the phenomena of opacity and riskiness of financing small and medium-sized enterprises (SMEs) worldwide, numerous investigations have been conducted to provide explanations to financial service providers' risk perceptions, lending practices and procedures. The risk compensation theory and the principal-agent theory provide a theoretical framework of most of the studies in risk perception. Using the positivist and interpretivist paradigm, the study sought to investigate the types of risks and risk perceived by financial service providers, examine the determinants of risk faced by financial service providers, and determine SMEs' characteristics and credit risk in the Sunyani Municipal Assembly.

The study adopted cross-sectional and descriptive study design. Multi-stage sampling technique was used to sample 217 SME operators and 64 credit officers

of formal and financial institutions. Questionnaires and interview schedule were used as instruments to collect data, while In-depth interviews were conducted with some bank managers. The data were analysed with SPSS version 21. Descriptive statistics such as frequencies, percentages, means and standard deviations were used to present the data, while logistic regression, chi-square test and Pearson product-moment correlation coefficient were used to test for statistical significance.

The major findings of the study are presented in line with the specific objectives: The first objective focused on the types of risk and risk perceived by financial service providers in the Municipality.

The following key findings emerged on the types of risk faced:

- Financial service providers in the Municipality encountered numerous risks in their credit delivery however, credit risk (84.4%) operational risk (60.9%) and interest rate risk (50.0%) were the most cited risk faced in the Municipality. In contrast to the risk that is significant to the performance and sustainability of financial institutions in the Sunyani municipality, credit risk (87.2%) was the most cited.
- Credit officers in the Municipality noted that generally, the SME economy was more costly to serve in comparison to larger corporate enterprise. Majority (71.9%) of the credit officials in the formal financial institutions noted that it is indeed costly, from the angle of portfolio profitability, while 28.1 percent of the credit officials in the informal financial institutions indicated that default rates on loans to SMEs relative to large enterprises were low. Equally important, the

credit officers in the Municipality indicated that the ratios of non-performing debts of SMEs relative to the large enterprise in the Municipality were very high. Approximately 72 percent of the credit officers noted that the non-performing loans of SMEs relative to larger enterprises were high, while 12.5 percent of the credit officers noted that the non-performing loans of SMEs relative to larger enterprises were low.

- The respondents in the Municipality take into consideration both qualitative and quantitative assessments for appraising credits. Majority (85.9%) of the credit officers indicated that they rely on qualitative assessment, while (62.5%) of the credit officials rely on quantitative assessment in appraising credit propositions. Similarly, the most cited mechanisms used for monitoring were banks regular visits (95.3%), stock inspection (95.3%) and valuation of contracts (89.1%), while credit referencing bureaus (39.1%) was the least cited in the Municipality.
- Majority of the credit officials (79.7%) indicated that the financing of SMEs is very risky, while (20.3%) of the respondents indicated that financing SMEs is a little risky. Equally important, credit officials (79.7%) indicated that the financing of SMEs are very risky. With (67%) officials of formal financial institutions opined that their thought, judgement and feelings about the SMEs sector are highly risky.

- The respondents in the formal and informal financial institutions noted that risk profile, cost of funds, BOG policy rate, interest rates with other banks and inflation rate were the most cited important factors that influence their lending rates.
- The majority (75.5 %) of the credit officers indicated that they reside in areas where their clients live, with most being informal financial service providers. The credit officers in the formal and informal financial institutions often search for a collateral substitute to lower the risk of default.

Objective two examined the determinants of perceived credit risks. The main issues were that:

- Credit policies and interest rates negatively affected credit risk. Thus, the default rates on loans increased when credit policies are not intensified and low-interest rates are charged with coefficients z = 4.569, p = 0.033, z = 5.641, p = 0.018 respectively.
- The negative effect of interest rate on credit risk with coefficient b = -2.756 and significant at p = 0.018 is in line with the risk compensation theory that high-interest rate reduces the risk of default.
- Appraisal of loans, governance, screening and monitoring, credit assessment did not influence credit risk in the study area. These variables were insignificant in determining credit risk.
- Credit officers in the Municipality cited weak appraisal of loans and unstable interest rates as the main source of risk in the Municipality.

Equally important, 64.1 percent of the respondents confirmed that the loans disbursed were diverted from the purpose for which the loan was secured.

- More than half (67.2 %) of the credit officials reported that the diversion of funds by borrowers to other projects results in the inability of the borrowers to honour the financial obligations.

Objective three examined the relationship between SMEs' characteristics and credit risk. The following key findings emerged:

- The variables that contribute significantly to the predictive ability of the model include inflation rate (z = 18.406; p = 0.000), time of disbursement of loans (z = 36.786; p = 0.000), and banks regular visits (z = 19.906; p = 0.000). Government interference, interest rate charged, staff extortion, diversion of funds, did not contribute significantly to credit risk.
- Firms age, educational status and collateral value significantly influenced credit risk, r = -.680, p =.001, .384, p = 000, and .434, p = 000 respectively. Thus SMEs' characteristics such as age, educational status and collateral value contribute significantly towards credit risk. Firms' size and gender of owner of SME did not influenced credit risk in the study area.
- Formal and Informal financial service providers in the Municipality seem to be risk averse to SMEs and would only lend to borrowers that have characteristics that reassure them of their ability to repay a loan. An observation of the features of commercial banks' lending facilities in the Sunyani Municipality revealed that banks seem to be risk averse to new

business customers, only offering facilities to either customers who have deposit or loan relationships with them.

Conclusions

Most of the financial service providers in the Municipality encounter credit risk, and the risk perception in financing SMEs differed among the various types of lenders, with the formal lenders perceiving SMEs to be more risky. Credit risk was the most cited risk that contributes to profitability and sustainability of financial institutions. Risk faced by credit officers in the Municipality are distinct, nonetheless, they overlapped and are interrelated. It was revealed that majority of the loans were diverted for the purpose unintended, as a result of, poor monitoring and irregular banks' visits undertaken by the credit officials to monitor customers.

Credit policies, inflation rates and interest rates influenced credit risk. For instance, default rates declined when credit policies were improved. High interest rates charged compensated the financial service providers from the high risk of default. The predominant reasons why most financial service providers charge higher risk premiums on SME loans are linked with SMEs' susceptibility to failure and changes in the external environment. Information asymmetry also contributes to the reason why financial service providers charge higher risk premiums for certain SME loans in comparison with larger corporates who enjoy the prime-lending rate (PLR).

The firms' characteristics such as age, size and collateral value influenced credit risk. For instance, older firms are associated with lower credit risk.

Furthermore, collateral value related positively with credit risk. Uniquely, the credit risk management functions were exercised with due diligence, as well as dedicated staff at head office and the risk manager ensures that the risk profiles of borrowers such as collateralisation of loans and credit guarantees schemes to support businesses in the SME sub-economy were critically assessed. Various financial service providers have successfully designed and are implementing appropriate tools and systems that enable them to accurately identify early when an SME's business is changing in a manner that heightens default or similar or related risks.

The study supports the risk compensation theory as indicated in the conceptual framework in Chapter Two, since formal and informal financial service providers' have established mechanisms to lower the risk of defaults and upon these bases, the following recommendations were made.

Recommendations

Based on the key findings and conclusions, it is recommended that financial service providers should:

1. Provide financial literacy to SMEs through training and workshops on how to invest the full loan amount in the intended project. Improvement in the financial literacy of clients would enable them to meet their financial obligations to the financial service providers in order to reduce the high default rates and credit risks associated with transacting business with SMEs. It is recommended that credit officers intensify the follow-up and

monitoring exercise they undertake to help reduce loan default of customers.

2. Review their interest rates downward regularly to commensurate with prevailing market conditions. The frequent benchmark of interest rate will improve loan performance. This is because the majority of SME operators complained of high-interest rate charged by financial service providers especially within the informal financial institutions.
3. Focus on the development of effective risk management techniques and business models through establishig specific risk profiles such as collateralization, credit insurance, credit guarantee schemes and requests for high equity contributions by prospective borrowers to help to improve access to bank finance for deserving SMEs considering their risk profile and informational opacity.

Recommendations for SMEs

Based on the key findings and conclusions, it is recommended that:

1. SME entrepreneurs should also try to seek clarification on the conditions attached to loans to reduce the number of unsuccessful applications. This would enable them to prepare adequately to meet loan requirements of financial service providers, which would make access to finance less difficult.
2. SME entrepreneurs should state the ideal time they wish to receive loans from financial service providers for their businesses. This will help financial

service providers to disburse the loan on time in order to generate maximum impact on businesses of SMEs and also help to reduce the moral hazard problem.

Limitations

The main handicaps of the study include, among other limitations, constraint of resources, the time schedule of credit officials to provide vital information and the quality of the data used in the study. Due to time and financial constraints, the study was limited to the areas under the jurisdiction of the Sunyani Municipality. The study also concentrated on SMEs in seam-stressing, tailoring, retailing, hardware and sawmilling . The data collected in the study represent the concerns of the SMEs that were chosen but do not give a clear picture of the SMEs' potential if for one reason or the other to default on loans. Thus, the approach concerns the characteristics of the SMEs and causes of credit risk.

Another limitation of the study is the quality of data collected. The quality of data collected impact negatively on the results, if there is incomplete or inaccurate information provided by the respondents. To reduce their impact by asking probing questions in various ways which do not affect the research ethics. Although the interpretations of results were in the context of these limitations, the quality of the results of the study was not eroded.

Suggestions for Further Research

The study examined the risk perception of financial service providers in financing SMEs in the Sunyani Municipality. In using the positivist and interpretivist paradigm, the study used primary data which were analysed using logistic regression, chi-square test and Pearson product-moment correlation coefficient. The use of cross-sectional or primary data provided only a snapshot of risk perception at a given point in time. If a different time frame or secondary data is used, there may be a possibility that the results may differ. The context of the current study may not be generalized to other populations in the country. It would also be beneficial to survey SMEs and collect data on their business operations, profitability, balance sheet and their use of credit. These would help to model the credit risk of SMEs better and corroborate findings from the supply side.

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APPENDIX A
RESEARCH QUESTIONNAIRE FOR CREDIT OFFICERS
UNIVERSITY OF CAPE COAST
INSTITUTE FOR DEVELOPMENT STUDIES

Introduction

This questionnaire is being used to elicit information on risk perception among financial service providers in financing small and medium-scale enterprises in the Sunyani Municipality as part of the requirement for the award of Master of Philosophy in Development Studies at the University of Cape Coast. I would be very grateful if you could fill this questionnaire to enable me to gain the necessary data to complete my research and help solve the problems which the research seeks to. Kindly complete the questionnaire by ticking the appropriate boxes or provide answers in the spaces provided. You are assured of confidentiality and anonymity on information provided. Thank you for your cooperation.

Section A: Characteristics and Background Information

This information is intended to appreciate the characteristics of the respondents.

1. What is your sex?
   ☐ Female ☐ Male
2. What is your highest educational level or nearest equivalent
   ☐ Certificate ☐ Diploma ☐ Degree ☐ Masters ☐
   Other please specify)……
3. What is your age? ……..……..
4. What is your position or rank in this institution?
   ……..
5. How long has the institution been in operation?
   ☐ Less than 1 year ☐ Between 6 and 10 years
   ☐ Between 1 and 5 years ☐ Over 10 years
6. What type of financial institution do you place your institution?
   Formal ☐ Informal ☐ Semi-formal ☐ Public ☐
   Others (Specify)……..……..
7. Which category of SMEs forms part of your clientele?
   (a) Retailing ☐ (b) Wood processing ☐ (c) Metalworks ☐
   (d) Dressmaking ☐
   (e) Catering ☐ (f) Hairdressing ☐ (g) Agro-processing ☐
   (h) Animal farming ☐ (i) Other specify……
8. Give reasons for your answer in (7) above ……...……
   ……
   ……
9. What share of loans has your institution made to SMEs in the total credit?
   ……
   ……
10. In recent period (say 2010-2017), this share is
    Firmly increasing ☐ Increasing ☐ Almost changed ☐ Decreasing ☐
    Significantly decreasing ☐
11. Where are the SMEs Clients more concentrated?
    ☐ Rural ☐ Urban ☐ Peri-urban

12. What has been the trend in terms of growth rate of SMEs accounts in the recent past? ……
……
……

Section B: Types of Risks and Risk Perception faced by Financial Service Providers within the Formal and Informal Financial Institutions.

13. Does your institution currently have SMEs among its clients?
☐ Yes ☐ No

14. If yes, does your institution have a separate unit managing the banking relation with SMEs
Yes☐ No☐

15. If yes what type of involvement do you have with SMEs? ……
……
……
……

16. List main lending products you offer to SMEs?
……..
……
……

Please tick the appropriate box that corresponds to your answer to each question.

17. SMEs loan are riskier than other loans?
Yes ☐ No ☐

18. What categories of threat does your institution face with regard to lending to SMEs?
Credit risk☐ Liquidity risk ☐ interest rate risk☐ foreign exchange risk ☐ market risk ☐

19. Indicates those problems faced by your institution when lending to SME sector (Please tick as many as are relevant to you)
☐ Lack of information on SMEs ☐ High transaction cost
☐ Lack of adequate collateral ☐ Lending technologies to SMEs
☐ Inherent risk related to SME sector

20. Are your firm's borrowers classified according to the threat they pose?
Yes ☐ No ☐

21. If yes, what hazard do you consider when lending to SMEs?
……
……

22. Do you have any assessment of how much SMEs contribute to the financial service provider's risks (relative to total risks)?
Yes ☐ No☐

23. What kind of exposure is significant to the performance and sustainability of your institutions? A) Credit risk b) liquidity risk c) Interest risk
d) liquidity risk ☐ e) compliance risk ☐ f) legislative risk ☐
g) Other Specify……..

24. Are all the types of threat faced by your institution interrelated or overlapped?

(a) Yes ☐ (b) No ☐

25. Default rates on loans made to SMEs are higher than those made to large enterprises?

(a) Very high ☐ (b) High ☐ (c) The are equal ☐ (d) No, they are lower (e) No answer ☐

26. Ratios of non-performing debts on SMEs lending are higher than the ratio on large enterprises lending

(a) Very high ☐ (b) High ☐ (c) They are equal ☐ (d) No, they are lower ☐ (e) No answer ☐

27. How do you mitigate SME risk?

……

……

28. What steps are used to appraise credits in your institution?

……

……

29. How is the credit risk management function organized in your financial institution?

……

……

30. Does your financial institution use scoring models to select SMEs?

Yes ☐ No ☐

31. If yes, what weight do you give to scoring in your lending decision? …….

……..

…….

32. If no, is this due to a bank-specific decision or is it affected by regulation?

……

33. If your financial institution uses scoring models, list the main (up to 5) variables used in your models …….

……

34. If your financial institution does not use scoring models, does the credit analysis rely on qualitative assessments?

Yes ☐ No ☐

35. If yes, what are some of the qualitative assessment methods use for credit analysis?

……

……

36. If your financial institution does not use scoring models, does the credit analysis rely on quantitative assessments?

Yes ☐ No ☐

37. If yes, indicate some of the quantitative assessments use for credit appraisal? …….
……
……
……
38. Indicate some the ways financial service providers monitor credit risk outlook for each particular SME? ……
……
……

Section C: Determinants of Perceived Credit Risks inherent in SMEs

39. Is lending to SMEs risky comparatively to large firms
☐ Yes ☐ No

40. Do your SME borrowers honor their loans based on the contractual agreements on time?
☐ Yes ☐ No

41. What are the causes of non-payment of credit in SMEs? (Please tick as many as apply)

☐ Weak appraisal of loans ☐ Poor governance and management control
Poor credit assessment ☐ Inappropriate credit policies
☐ Volatile interest rate ☐ laxity in credit assessment
☐ Lack of financial incentives to employees

42. Among the various causes of credit non-payment in SMEs, which of them constitute the chief source of threat to your institutions?
……
……
……

43. Do SMEs who borrowed funds in the name of businesses only walk out of financial institutions and use the funds on any project of their choice?
Yes ☐ No ☐

44. If yes, do this action affects your profitability explain?
……
……

45. Do financial incentives provided to the employees of your financial institutions adequate enough not to cause employees to lend recklessly to borrowers with questionable character?
Yes ☐ No ☐

46. If yes, mention some of the incentives provided to your employees
……
……

47. Do the employees of your institution have a strong tendency to opportunism and moral hazards by approving credit to poorly performing firms and individuals with questionable credit records?
☐ Yes ☐ No

48. If yes, how do you safeguard against such practice?
……
……

49.What type of financial institution do you place your institutions?

☐ Formal institution ☐ Semi-formal ☐ Informal

50. In your opinion, would the financing of SMEs be

(a) Very risky ☐ (b) somewhat risky ☐ (c) a little risky ☐ (d) not at all risky to your institution ☐

51. Are there huge differences in your judgment and beliefs in lending to SMEs?

☐ Yes ☐ No

52. What are determinants of interest rates or pricing in your institution?

.....

.....

52. Do youlive in the communities or villages where your SME client resides?

☐ Yes ☐ No

53. Does your institution often search for collateral substitutes in order to lower the risk of their loan portfolio?

☐ Yes ☐ No

54. If yes, please mention them

……

……

55. Do your institution often use screening and monitoring of borrowers and adequate enforcement mechanism?

☐ Yes ☐ No

56. If yes indicate the screening and monitoring mechanisms enforced

……

……

57. What factors do you consider in setting your interest rate?

……

……

58. Are your interest rates set higher in your institution due to the higher risk levels ofSMEborrowers**?**

☐ Yes ☐ No

59. In your opinion, how do your customers feel about your interest rates?

……

……

60. If yes, do your interest rates encourage or discourage your SME borrowers?

……

APPENDIX B
INTERVIEW SCHEDULE FOR OWNERS OR MANAGERS OF SMALL AND MEDIUM-SCALE ENTERPRISES

Introduction

This interview schedule is designed to assess the relationship that exists between the characteristics of small and medium-scale enterprises owners and the probability of default or non-default in the Sunyani Municipality. This exercise is strictly for academic research purposes and hence, sincerity and free expression of opinions and suggestions as much possible is requested. Anonymity would be assured as responses given for this exercise would be treated as confidential.

Section A: Characteristics of Small and Medium-Sized Enterprises

1. Position of respondent ……
2. Age ……
3. Sex (a) Male [ ] (b) Female [ ]
4. Marital status
(a) Single [ ] (b) Married [ ] (c) Separated [ ] (d) Divorced [ ]
(e) Cohabitation [ ]
5. Educational level of the respondent
(a) None [ ] (b) Basic [ ] (c) Secondary [ ] (d) Tertiary [ ]
(e) Higher [ ]
6. Type of enterprise
(a) Retailing [ ] (b) Saw milling and wood processing [ ]
(c) Metal works [ ]
(d) Dressmaking [ ] (e) Catering [ ] (f) Hairdressing [ ]
(g) Agro processing [ ]
(h) Poultry farming [ ]
7. Year of establishment ……
8. Is your business registered? (a) Yes [ ] (b) No [ ]
9. How long have you been operating this business?
.....
10. Number of workers you started the business with
……
11. Number of workers now……
12. Reason(s) for the change in number of workers
[a] ……

[b]……

[c]……

[d]……

13. Type of business ownership:
[a] Sole proprietorship [ ]
[b] Partnership [ ]
[c] Limited liability [ ]
[d] Other (specify) [ ]

14. Indicate the type of association that you belong:

[a] susu [ ]

[b] Credit Union [ ]

[c] Co-operative [ ]

[d] Others (specify)……..

15. If No, why not? ……

Section B: Types of Risks Faced (SMEs Perspective)

17. In your opinion, what kind of hazard (problem) do financial service providers encounter?
(a) Credit risk [ ] (b) interest rate risk [ ] (c) liquidity risk [ ] (d) foreign exchange risk [ ] (e) legislative risk [ ] (f) reputational risk [ ]

18. What kind of risk (problem) is significant to the profitability and sustainability of financial institutions?
(a) credit risk [ ] (b) interest rate risk [ ] (c) liquidity risk [ ] (d) foreign exchange risk [ ] (e) legislative risk [ ] (f) reputational risk [ ]

19. What is currently the most pressing risk (problem) your firm is facing?
(a) Finding customers [ ]
(b) Competition [ ]
(c) Access to finance [ ]
(d) Costs of production or labour [ ]
(f) Availability of skilled staff or experienced managers [ ]
(g) Regulation. [ ]
(h) Other.....

20. Are you aware of the credit criteria used to evaluate the creditworthiness of SME borrowers?
Yes [ ] No [ ]

21. If yes, what are some of the requirement do financial service providers demand before granting credit?
……

23. Do financial service providers request any guarantee before the loan is granted?

Yes [ ] No [ ]

24. If yes, mention some of the credit guarantees requested by financial service providers

……

Section C: Determinants or Sources of Perceived Credit Risk

25. Type of credit you prefer

[a] Bank credit [ ]
[b] Non-bank credit [ ]
[c] Susu credit [ ]
[d] Private lenders [ ]
[e] Suppliers credit [ ]
[f] Others, specify…….

26. Have you ever borrowed to finance your business? [a] Yes [b] No

27. If No, why?

[a] No need for a loan [ ]
[b] Application was rejected [ ]
[c] Did not meet requirements [ ]
[d] Others, specify……..…….

28. If yes, where did you borrow from? …….

29. How many times have you applied for a loan? …….

30. Did you pay back the loan on time? [a] Yes [ ] [b] No [ ]

31. If No, reasons for not paying back the loan on time

……

32. I Yes, did you generate money from the business to pay the loan? [a] Yes [b] No

33. If No, provide reasons for generating money outside the business to pay back the loan

34. Indicate the factorsthat compel you not to repay your loan(Please tick as many as possible)

(a) Volatile interest rates [ ] (b) supervision [ ] (c) Monitoring [ ]
(d) Collateral [ ] (e) external factors [ ]

35. This section asks several questions regarding the factors that are likely to affect the repayment of credit.Please indicate how the following statements are applicable to you on a 5 point Likert scale where;

1= very weak agree, 2= weak agree, 3= neutral, 4= strongly agree, 5= very strongly agree

	Very Weak Agree	**Weak Agree**	**Neutral**	**Strongly Agree**	**Very Strongly Agree**
Government interference					
High inflation rate					
High annual interest rate charged on the credit					

Time of disbursement(delay in crediting of facility to account					
Staff extortion(giving money to staff to enhance credit approval)					
Monitoring and Bank regular visits					
Diversion of funds (used credit for a different purpose)					

36. In your opinion, why do you think SME borrowers generally default with their credit repayment?

……

37. What suggestions would you give to the financial service providers to help curtail the alarming rate of credit non-payment among SME borrowers?

……

Section D: SMEs Characteristics and Credit Risk

38. Are financial institutions' attitudes and beliefs in lending lessfavourable for small borrowers?

a. Yes [ ] No [ ]

39. If yes, what reasons accounts for financial institution's anticipation and visualization of threats in financing SMEs?

……

40. Are you aware that the higher interest rates charged to smaller borrowers are attributed to differences in apparent threats in financing?

a. Yes [ ] No [ ]

41. If yes, do the high-interest rates affect your profit margin?

a. Yes [ ] No [ ]

This section asks you many questions regarding how firm characteristics may influence credit payment or non-payment. On a 5 point Likert scale [(1) = very weak agree and (5) = very strongly agree, please indicate how the following statements are applicable to you.

In your view indicate how the firm's size may influence credit payment or non-payment.

	Very Weak Agree	Weak Agree	Neutral	Strongly Agree	Very Strongly Agree
42) Firms that have been in operation for a longer period are less likely to default					
43) Financial service providers view younger firms as riskier than they may view older firms					
44) Older borrowers are more risk-averse and therefore less likely to default					
45) Financial service providers are hesitant to lend to younger borrowers who are more risk embracing					
46) Smaller firms may have lower collateral relative to their liabilities than larger ones, and unit bankruptcy costs are likely to decrease with size					
47) When firms are smaller, they pose a higher risk because small firms have high failure rate compared to large firms					
48) Smaller firms have higher risk and as such have higher rate of failure compared to large firms					

In your view indicate the how SME operator's educational level may influence credit payment or non-payment.

	Very Weak Agree	Weak Agree	Neutral	Strongly Agree	Very Strongly Agree
49) Formal education influences the sense of responsibility and reputation of firms which reduces the probability of default					
50) Borrowers with high level of education are more likely to repay their loan					

In your view indicate how collateral may influence credit payment or non-payment

	Very Weak Agree	Weak Agree	Neutral	Strongly Agree	Very Strongly Agree
51) lower risk borrowers are willing to pledge more and better collateral					
52) The higher the collateral value the higher the incentive for the borrowers to repay the loan since they do not want to lose their collateral					
53) Collateral reduces the financial service providers' risk when loans are made to SMEs borrowers					

In your view indicate how SME operator's gender may influence credit payment or non-payment.

	Very Weak Agree	Weak Agree	Neutral	Strongly Agree	Very Strongly Agree
54) Repayment of loan is higher among female borrowers, mostly due to more conservative					

investments and lower moral hazard risk					
55) Men are more likely to default than women					
56) Women have better repayment records than men					
57) Women consistently outperform in terms of repayment of loans than men.					

APPENDIX C
LOGISTICS REGRESSION TABLES, FINANCIAL SERVICES PROVIDERS

-Classification Table a,b

	Observed		Predicted Credit Risk		Percentage Correct
			No	Yes	
Step 0	Credit Risk	No	0	20	.0
		Yes	0	44	100.0
	Overall Percentage				68.8

a. Constant is included in the model.
b. The cut value is .500

Classification Table

	Observed		Predicted Credit Risk		Percentage Correct
			No	Yes	
Step 1	Credit Risk	No	9	11	45.0
		Yes	1	43	97.7
	Overall Percentage				81.3

a. The cut value is .500

Hosmer and Lemeshow Test

Step	Chi-square	Df	Sig.
1	21.020	8	.007

Omnibus Tests of Model Coefficients

		Chi-square	Df	Sig.
Step 1	Step	23.365	7	.001
	Block	23.365	7	.001
	Model	23.365	7	.001

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	56.134[a]	.306	.430

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

LOGISTICS REGRESSION TABLES, SMEs

Owner-manager and firm characteristics

Classification Table[a,b]

Observed			Predicted		
			Credit risk		Percentage Correct
			default	non-default	
Step 0	Credit risk	default	118	0	100.0
		non-default	46	0	.0
	Overall Percentage				72.0

a. Constant is included in the model.

Classification Table[a,b]

Observed			Predicted		
			Credit risk		Percentage Correct
			default	non-default	
Step 0	Credit risk	default	118	0	100.0
		non-default	46	0	.0
	Overall Percentage				72.0

a. Constant is included in the model.

b. The cut value is .500

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	114.660[a]	.386	.555

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4.030	6	.673

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Number of workers started with - Current number of workers	-.986	2.354	.160	-1.301	-.671	-6.171	216	.000