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The Relevance of Due Diligence, Hard and Soft Information in Financing Small Firms in Ghana

by

Oghenekome Umuerri

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Approved Dissertation Committee

Prof. Dr. Tilo Halaszovich
Constructor University

Prof. Dr. Jürgen Bode
Hochschule Bonn-Rhein-Sieg University of Applied Sciences

Prof. Dr. Christoph Lattemann
Constructor University

Date of Defense: 17.03.2025

School of Business, Social & Decision Sciences

Statutory Declaration

Family Name, Given/First Name	Umuerri, Oghenekome
Matriculationnumber	20332446
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Thesis Summary

Small business lending is significantly influenced by the interplay between the information institution types, the information models, and the due diligence process undertaken by financial institutions. While previous research has examined the impact of hard and soft information on credit availability, limited attention has been given to how different combinations of these information types and various financial institution types influence the quality of loan applications and the loan application success rates. Additionally, the role of due diligence in assessing small business loan applications and the specific signals lenders rely on for decision-making remain underexplored.

This study integrates insights from three research streams to provide a unique analysis of small business lending dynamics. First, based on primary data collected from 242 small firms in Ghana and considering different financial institutions, including non-banks, we examine the effect of three distinct combinations of hard and soft information on loan application success rates. Our findings challenge conventional wisdom, indicating that an increased emphasis on soft information does not necessarily enhance transparency or improve loan application success rates. Moreover, while small-sized banks positively influence credit availability, this effect does not extend to small-sized non-banks.

Second, leveraging signal theory, we analyze the due diligence process undertaken by financial institutions through qualitative insights from 24 loan officer interviews. We identify 11 key hard and soft signals that influence credit risk assessments, including key person risk, change in leadership risk, articulation of company value, adaptation to change, data accuracy, and completeness. These insights highlight the multifaceted nature of credit decision-making.

Third, using primary data collected from 193 loan officers in Ghana, we examine how specific management and financial information quality signals shape lenders' perceptions of loan application quality. We find that signals such as adaptability, leadership preparedness, information defense, and record accuracy positively influence lenders' evaluations.

Our study offers theoretical and practical implications by elucidating how institutional type, mixed information models, and due diligence signals interact to shape small business credit availability. These findings contribute to small business finance literature and provide actionable insights for lenders and policymakers seeking to optimize small business lending frameworks.

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List of Abbreviations

ADB	Africa Development Bank
COVID-19	Coronavirus disease 2019
EU	The European Union
FAO	Food and Agriculture Organisation
GEA	Ghana Enterprise Agency
GSS	Ghana Statistical Service
IFC	International Finance Corporation
IMF	International Monetary Fund
MOFA	Ministry of Food and Agriculture, Ghana
MSME	Micro-Small Medium Enterprise
NBFI	Non-Bank Financial Institution
NBSSI	National Board of Small-Scale Industrie
OECD	Organisation for Economic Co-operation and Development
RBV	Resource Based View
SME	Small Medium Enterprise

Chapter 1 : General Introduction

1.1 Introduction

In 2019, Africa Development Bank (ADB) reported a Small Medium Enterprise (SME) financing gap of $81.8 billion in Africa (African Development Bank, 2019.). In Ghana, SME financing gap was reported at $6.1 billion (Vicente, 2020). The institutional gaps present in many developing economies, particularly in African nations, make it extremely difficult for markets to meet their full potential (Easterly, 2001). In such an environment, lenders are often information disadvantaged, making it hard to make informed loan application decisions. In Ghana, nine in every ten loan applications from households and micro, small, and medium enterprises (MSME) are rejected (Bigsten et al., 2003). These high rejection rates have a serious impact on the operations of small businesses in Ghana. Nevertheless, the financial reforms in Ghana (Antwi & Ohene-Yankyira, 2017), aimed at helping financial institutions provide credit to disadvantaged borrowers, indicate that the government is committed to addressing this issue. This commitment makes Ghana a relevant setting for this study.

This study seeks to expand our understanding of small business lending in Africa by examining the decision-making process in small business credit financing. Generating new insight that will make a meaningful contribution to small business finance requires a new approach and the rejection of oversimplification. For example, most credit decision-making-related research has focused on the final decision to approve or reject a loan. While this final decision is an important event in the credit application process, it is not the only decision event. Financing processes usually include due diligence or verification and cross-checking of submitted information (D. J. Cumming et al., 2019; Umuerri et al., 2024). This phase precedes the final decision event. In other words, before the credit committee decides on a loan application, the loan officer must cross-check all information and determine if the loan application should even be presented to the credit committee. Overlooking other phases in the loan application process hinders the field of small business finance from understanding important mechanisms, interactions, and relationships that may influence the final decision.

Lenders must analyze various types of information to assess the firm's potential before deciding to approve or reject loan applications. Some studies have categorized the information types that lenders analyze into hard and soft information (Cornée, 2019; Uchida et al., 2012). An examination of the role of hard and soft information in credit decision-making in Africa suggests that, due to the opaque nature of small firms, most financial institutions rely on soft information to make the firm transparent (Antwi & Ohene-Yankyira, 2017; Behr et al., 2011). Following a prolonged period of research focusing on role of either hard or soft information in credit finance. Grunert et al. (2005) and Berger and Udell's (2006) papers sparked a new line of inquiry by asserting that financial institutions do not exclusively use hard or soft information. The authors argue that, in reality, financial institutions use a mix of both types of information. This perspective revitalized the discussion and encouraged empirical testing of the effects of a mixed model of soft and hard information (Cornée, 2019). Building on the work of these prior studies, this thesis aims to deepen our understanding of the role of hard and soft information further. We believe that a new investigation into the homogeneity of the information mix will enhance our understanding of access to finance in African countries.

This thesis aims to incite new inquiry into small business finance in Africa. Particularly in the information asymmetry and due diligence discourse on financing small businesses in Africa. This is done by further examining the effect of mixed models of hard and soft information on loan application success and exploring and testing the effect of due diligence on loan application quality. This chapter continues with a brief literature review that sets the stage for the thesis. In the literature review, the reader is introduced to the main actors and elements of the study. It begins by defining micro-small medium enterprises in Ghana and highlighting the differences in small business definitions across other countries. Then, it introduces the consumer goods and food processing industry, discussing its importance in the SME segment and why it is the ideal industry for observing SME behavior in this study. Following this, the review provides an understanding of financing options in Ghana by discussing the available sources of financing in Ghana. It then highlights the problem statement and provides an overview of the research questions addressed in this thesis. After describing the conceptual and theoretical approach, along with the methodology adopted in this thesis, this chapter concludes with a summary of the introduction chapter and a previewof what comes next in the subsequent chapters.

1.2 Literature Review

1.2.1 Small business definition in Ghana

There is no universal definition of small businesses commonly referred to as Small Medium Enterprises (SMEs) or Micro-Small Medium Enterprises (MSME). The definition of SMEs sometimes depends on which business sector, country, or region the SME is located (OECD, 2002). The International Finance Corporation (IFC) defines SMEs as “registered businesses with less than 300 employees" (IFC, 2025). The European Union (EU) considers three categories and thresholds when defining SMEs. Enterprises are categorized into micro, small, and medium-sized. The definition considers employee headcount, annual turnover, and balance sheet as the criteria for SME definition. To be classified into this category, enterprises must have an employee strength of less than 250 and an annual balance sheet of less than 43 million Euros or a turnover of less than 50 million Euros (EU Commission, 2005).

The variation in the definition of SMEs is often based on what criteria and thresholds are considered. For example, unlike the European Union, large firms are considered to have more than 200 employees; in the United States, large firms are considered to have more than 500 employees. (OECD, 2002). In Ghana, the definition of SMEs is also based on similar criteria used by the European Commission and the IFC. The Ghana Statistical Service (GSS) (2015) considers the fixed asset item on the balance sheet and employee headcount when defining SMEs. It defines a small-scale enterprise as an enterprise with between 5 and 29 employees and fixed assets not exceeding $100,000, while a medium-scale enterprise is an enterprise with between 30 and 99 employees (see Table 1-1).

Table 1-1. Ghana and EU SME Definition

Enterprise category	Ghana Statistical Service* Employee size	EU Commission** Employee size
Medium-sized	<101	< 250
Small	< 31	< 50
Micro	< 6	<10

*As described in the Integrated Business Establishment Survey, published by the Ghana Statistical Service, 2015.

**Annual turnover or annual balance sheet. The information is an excerpt from the European Union Commission's "User Guide to the SME definition," which was last updated in 2020.

1.2.2 Consumer goods and food processing industry in Ghana

In developing economies, small firms play a key role in enhancing the well-being of a nation. Small firms create value through job and income generation. In Ghana, it is estimated that nine out of every ten businesses are small enterprises (Abor & Quartey, 2010a). Ghanaian small firms typically engage in such businesses as agro-processing, beverage brewing, food processing, bakery, small-scale mining, and furniture making (Kayanula & Quartey, 2000). A vital industry in Ghana is the consumer goods and food processing industry, where it is estimated that half of the labor force is employed (Ministry of Food and Agriculture, 2010). Acknowledging the importance of promoting agriculture to the growing young population, the Ghanaian government has made substantial effort to make it more attractive for investment, including offering tax exemptions for new ventures engaged in agro-processing (Owoo & Lambon-Quayefio, 2018).

The Food and Agriculture Organization (FAO) (1998) describes agro-processing as the transformation that occurs when “agricultural farm, livestock, aquaculture sources” are converted into other usable forms. The processing of materials into complex forms like clothing, paper, or bread is called downstream industry. In contrast, other forms of processing, like flour milling or fish canning, are referred to as upstream industries. The agriculture sector in Ghana consists of the following five sectors: livestock, fishery, forestry, crops, and cocoa. (Ministry of Food and Agriculture, 2010).

Most processing activities occur in the crop sector, such as maize, cashew, oil palm, fruits, groundnuts, millet, and sorghum processing. However, Ghana suffers from significant losses in post-crop harvests, mainly from a lack of proper agro-processing and food-processing technologies. Andam and Silver (2016) write that processed foods are common in retail shops in Ghana, but only 20 percent are processed locally. During the Kwame Nkrumah era in Ghana, agro-processing received much attention. Notable were the state-owned tomato processing plant in Pwalugu and the sugar factories in Komenda, which lie in the north and south of Ghana. However, due to various challenges, these establishments were poorly managed, later privatized, or closed (Owoo & Lambon-Quayefio, 2018). More than three-quarters of processed tomatoes in Ghana are imported (Andam & Silver, 2016)The sector still exhibits high levels of underinvestment, and as a result, most enterprises cannot grow and remain small. Micro-sized firms account for more than 80 percent of agro-processing firms in Ghana.

1.2.3 Sources of formal financing in Ghana

According to the Ghana Banks and Specialized Deposit Act, 2016 (Bank of Ghana, 2016), financial institutions offer financial services that enable customers to save and deposit money, bridge cash shortfalls, and facilitate payment and investment products that generate wealth. However, evidence from many developing countries indicates that banks face considerable challenges in delivering these services and enhancing the financial sector. Acknowledging the access to finance challenges, the Bank of Ghana implemented financial reforms that led to the creation of various financing options that cater to the needs of small businesses in Ghana (Senzu, 2016). Available financing sources include banks, savings and loans companies, trade credit firms, leasing firms, and informal sources.

Banks

In many countries, banks serve as a significant source of financing for firms. Compared to other sources of capital, banks are the number one source of financing for small business needs and projects (Lopes & Costa, 2017). However, the relationship between small businesses and banks in many developing countries is quite different. Due to difficult credit terms such as stringent collateral and high interest rates, SMEs are often discouraged from borrowing from banks. Additionally, because many SMEs operate in the informal economy, the transaction cost of processing and managing credit is high and unattractive to banks. (Beck & Cull, 2014; Kauffmann, 2005). Because it is difficult for most banks to obtain hard information (financial statements) from SMEs to process loan requests, many banks employ relationship lending practices to obtain soft information that may help fill in the information gaps. (Cornée, 2019). In Ghana, commercial banks and rural and community banks are common sources of financing for small firms (Steel & Andah, 2004). While rural and community banks may accept deposits and offer credit, they are primarily structured to serve rural customers and extend agricultural loans (Kadri et al., 2013). Rural banks employ innovative techniques to reduce transaction costs, such as group-based lending. This technology allows rural banks to recruit a group to monitor extended loans indirectly.

Savings and Loans Companies

Savings and loan companies can be traced back to the restructuring of informal finance companies (SUSU) in Ghana (Quaye & Sarbah, 2014). The Ghana Non-Bank Financial Institution Law (1993) licensed these institutions to accept deposits and provide limited, and small-scale financial intermediation. Their operations are limited to offering demand deposits and current accounts (Senzu, 2016). Savings and loan companies build close relationships with small borrowers, allowing them access to information that commercial banks find difficult to access (Senzu, 2016). According to the Bank of Ghana (2021), there are 25 licensed savings and loan companies in Ghana.

Trade Credit Firms

Trade credit can be described as a situation where the firm can defer payments for goods supplied or services rendered (De Carvalho & Schiozer, 2015). For the firm, the deferred payment serves as a form of short-term financing and will help to either free up cash for redeployment or increase the company's assets. This form of financing is particularly important for financing a firm's inventory. Trade credit has been observed to play an especially important role in SMEs' performance in developing countries. A recent study found that nearly a quarter of purchases made by Ghanaian agro-businesses were based on trade credit terms (Dary & James, 2018). A distinct advantage over banks and financial institutions is that suppliers have a mix of hard and soft information about the firm that banks find difficult to access (Petersen & Raghuram, 1997).

Leasing firms

A popular form of capital equipment financing utilized by firms is leasing. Leasing involves an agreement between two parties (Lessor and Lessee) whereby the Lessor agrees to finance an asset and grants the Lessee the right to use the asset for a specified period. The Lessee makes payments for using the asset during this agreed-upon time. A survey found that two-fifths of European SMEs surveyed used lease financing, making it the most popular source of financing (Oxford Economics, 2015) amongst those surveyed. Its popularity among SMEs could be attributed to the following reasons: 1) collateral is often not required, 2) lower down payments, and 3) the ability to predict and manage cash flow (Oxford Economics, 2015). Additionally, compared to bank loans, the processing time for leasing credit approval is quicker. There are various types of lease facilities available to firms; the Lessor may, in addition to financing the asset (finance lease), also service and maintain the asset (operating lease) or require a down payment and installment payment while ownership of the asset lies with the Lessee (hire purchase). Standard capital equipment financed by leasing includes machinery, passenger, and haulage transport equipment. In Ghana, the Leasing industry is relatively young. In a 2006 IFC survey, only seven leasing companies formally existed in the Ghanaian market. The survey reported that finance leases were the most popular type of lease, and the average lease period in Ghana was three years.

Problem Statement and Research Questions

1.2.4 Problem Statement

The growing population in Africa signals significant workforce opportunities within the continent. However, it also highlights labor market challenges, such as the need to create enough jobs to match the large workforce (International Monetary Fund, 2024). The situation becomes even more pressing when one considers that small businesses employ a significant share of the workforce yet find it difficult to access the necessary financing to grow. Ghana’s high loan rejection rates and small business funding gap of 6.1 billion dollars (Vicente, 2020) further underscore the need to examine the interaction between lenders and borrowers more closely. Understanding the methods, factors, or signals lenders consider will illuminate the credit decision-making process. Various studies have examined the role of hard and soft information in small business lending. Research has shown that combining hard and soft information better predicts repayment capability (Grunert et al., 2005a). However, this finding might be misleading as it implies that all combinations of soft and hard information are good predictors of loan repayment and even loan application success. For example, compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate?

Another issue related to credit decision-making is the lack of attention given to the due diligence phase of the process. Consequently, little is known about the dynamics of due diligence in small business financing. In particular, the signals that loan officers consider when assessing the quality of a loan application. Examining the methods and signals involved in credit decision-making can provide insights that inform small business lending theories and management policies. This study aims to better understand how financial institutions combine hard and soft information and what quality signals loan officers consider during due diligence in Ghana. To achieve this aim, the following research objectives were identified.

- Measure the effect of unique combinations of hard and soft information on loan application success rate
- Identify the signals loan officers consider that influence their perception of quality loan applications
- Measure the effect of signals observed during due diligence on the loan officers' perception of the loan application quality

- Generate recommendations to increase the efficiency and effectiveness of the financial markets for small businesses in Africa, i.e., to better match the needs of lenders and borrowers.

1.2.5 Research Questions

This thesis consists of three studies (see Table 1-2) divided into two parts. The first part consists of chapter 2, and the second part consists of chapters 3 and 4. Part 1 discusses *hard and soft information in small business credit decision-making*. The goal is to enhance our understanding of how lenders use hard and soft information in small business lending. The second part investigates *hard and soft signals in small business credit decision-making*. First, the relevant signals are identified in Chapter 3, followed by an assessment of their strength in Chapter 4. Additionally, Part 2 focuses on the due diligence phase of the credit decision-making process, with the goal of making the loan application process as transparent as possible and emphasizing the significance of the due diligence phase in credit decision-making. In addressing the research objectives of this thesis, three research questions were examined:

Chapter 2 (Research Question 1) focuses on the research question: *Compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate?* The paper "Antecedents of loan application success rate in African firms – The role of formal institutions and the nature of business in financing MSMEs in Ghana" which was later revised to "The relevance of how financial institutions combine hard and soft information in small business financing" was presented at the prestigious 2022 Academy of International Business (AIB) Conference in Miami, USA (see Table 1-3) and submitted to the Journal of Financial Services Research (see Table 1-4). This study examines how the unique combinations of hard and soft information from financial institutions influence small business loan application success rate. The traditional small business lending literature classifies hard- and soft information based on bank size. The theory suggests that large banks associate more with hard information, while small banks are typically associated with soft information (Berger & Black, 2011). However, our study moves beyond bank size and uses financial institution types to classify three unique combinations of hard and soft information. These unique combinations include financial institutions with *a low emphasis on hard information and a high emphasis on soft information*, financial institutions with a *balanced combination of hard and soft information,* and financial institutions with a *high emphasis on hard information and a low emphasis on soft information*. Using data collected from 242

Ghanaian small firms, we find that contrary to the conventional beliefs on soft information, our results suggest that the effect of a mixed model with a higher emphasis on soft information will not make small firms more transparent and increase their loan application success rate. Additionally, if the type of financial institution is considered, the positive effect of small-sized banks on credit availability does not extend to small-sized non-banks.

Table 1-2. Overview of Research Questions

Chapter	Research Question	Methodology	Results
2	Compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate?	Quantitative Analysis	Contrary to the conventional beliefs on soft information, our results suggest that the effect of a mixed model with a higher emphasis on soft information will not make small firms more transparent and increase their loan application success rate. Additionally, if the type of financial institution is considered, the positive effect of small-sized banks on credit availability does not extend to small-sized non-banks.
3	What signals do loan officers consider when performing small business loan application due diligence?”	Qualitative Analysis	Our study identified 11 key hard and soft signals loan officers use to access small business credit risk during due diligence. The key signals include key person risk, change in leadership risk, articulation of company value, adaptation to change, separating business and personal finances, personal reputation, transparency and willingness to share information, data accuracy and completeness, regular account operation, faulty budget and turnover assumptions and legitimacy of collateral.
4	What is the effect of management and financial information quality signals obtained during due diligence on	Quantitative Analysis	The study’s results indicate that signals such as the ability to adapt to change, preparedness for a change in leadership, the ability of small firms to defend information about the business to lenders adequately, and accurate

	the loan officer's perception of the loan application's quality?		and complete records signal good management and financial information quality and improve loan officers' perception of the quality of the loan application.

Chapter 3 (Research Question 2) focuses on the following research question: *What signals do loan officers consider when performing a small business loan application due diligence?* The paper "Loan Application Due Diligence and Financing Small Firms in Africa" was presented at the 2024 World Congress International Council for Small Business in Berlin and published in the October 2024 Issue of the Journal of the International Council for Small Business with my supervisors, Prof. Dr. Tilo Halaszovich and Prof. Dr. Jürgen Bode. The study examined financial institutions' application of due diligence when processing small firm loan applications. Using qualitative data collected from 24 loan officers, our study identified 11 key hard and soft signals loan officers use to access small business credit risk during due diligence. The key signals include key person risk, change in leadership risk, articulation of company value, adaptation to change, separating business and personal finances, personal reputation, transparency and willingness to share information, data accuracy and completeness, regular account operation, faulty budget and turnover assumptions and legitimacy of collateral.

Table 1-3. List of Publications and Conference Contributions

Journal/Conference	**Title of Paper**
2022 Academy of International Business (AIB), Miami, USA	Antecedents of loan application success rate in African firms – The role of formal institutions and the nature of business in financing MSMEs in Ghana
2024 World Congress International Council for Small Businesses (ICSB), Berlin, Germany	Loan Application Due Diligence and Financing Small Firms in Africa
Journal of International Council for Small Businesses (2024)	Loan Application Due Diligence and Financing Small Firms in Africa

Table 1-4. List of Paper Submissions

Journal	Title of Paper
Journal of Financial Services Research	The relevance of how financial institutions combine hard and soft information in small business financing
Journal of the Knowledge Economy	The Role of Signaling Management and Financial Information Quality in Small Business Lending in Ghana

Chapter 4 focuses on the research question: *What is the effect of management and financial information quality signals obtained during due diligence on the loan officer's perception of the loan application's quality?* This study titled "The Role of Signaling Management and Financial Information Quality in Small Business Lending in Ghana" was submitted to the Journal of the Knowledge Economy. It measures the effect of the due diligence signals identified in Chapter Three on loan officers' rating of the quality of specific small business loan applications. Using quantitative data collected from 193 loan officers, the study's results indicate signals such as the ability to adapt to change, preparedness for a change in leadership, the ability of small firms to defend information about the business to lenders adequately, and accurate and complete records signal good management and financial information quality and improve loan officers' perception of the quality of the loan application.

1.3 Theoretical Framework

In addition to engaging with prior literature, the thesis uses three core theories to build a strong logical argument and ground the hypothesis formulated. The following theories were used during the thesis.

1.3.1 Information Asymmetry Theory

Information asymmetry was initially discussed in economics as a term used to describe an imbalance in information levels between two parties engaged in any type of transaction. (AKERLOF, 1978). This issue is prevalent and can be observed wherever more than one party is involved. Knowledge is often distributed unevenly, with varying levels of understanding due to individuals having different amounts of information (Schmidt & Keil, 2013; Stiglitz, 2002). These discrepancies in knowledge or information levels often arise from access to privileged information. Some authors assert that when certain information is concealed from one party during a transaction, it can lead to adverse selection and moral hazard problems (AKERLOF, 1978; Connelly et al., 2010; Stiglitz, 2002). To address these information gaps, many financial institutions utilize various technologies, such as loan histories and collateral, to bridge these information gaps.

1.3.2 Signal Theory

Knowledge gaps create information asymmetrical problems in transactions involving two or more parties (Abdelhafid & Mohammed, 2019). Under such conditions, the information-advantaged party sends information whose full observability is privy only to the sender (Connelly et al., 2010). Consequently, the receiver must bridge the information gaps and seek signals that inform the decision-making process. Spence (1973), a proponent of signaling theory, emphasized the role of signals in conveying quality. According to the author, signals serve as mediums for conveying information about the quality of a particular object or subject. Signals involve two parties. A signaler (sender) sends information to a signal receiver. Signal efficacy is a function of the signal's cost and observability. To attract qualified loan applicants, financial institutions' entry requirements signal the customer's potential.

1.3.3 Resource-Based View

Firms are often competing with each other for market share. The firms that out-compete their competitors can uniquely coordinate and efficiently employ their resources to produce value that others cannot replicate (Barney, 1991; Makadok, 2001). In his 1991 paper, Jay Barney proposed that firms with a sustained competitive advantage display specific internal characteristics that facilitate this advantage. The author argues that if all firms have the same resources, no firm could establish a competitive advantage position that other firms cannot imitate. Furthermore, the author asserts that firms' resources are not perfectly mobile; if they were, it would be easy for firms to acquire resources. Although there is some similarity to transaction cost theory, the resource-based view differs because of its focus on resources rather than cost. If capital is considered a resource, the significance of the resource-based view becomes immediately apparent. The implication is that a firm that can internally acquire the technology necessary to acquire capital and efficiently deploy funds would enjoy a competitive advantage over its rivals.

Table 1-5. Summary of Core Theories

	Theory	Chapters	Key concepts	/Authors cited
	Core Theories			
1	Information Asymmetry Theory	2, 3, 4	Hard and Soft Information Adverse selection Moral hazard	(Abdelhafid & Mohammed, 2019; AKERLOF, 1978; Cornée, 2019; Stiglitz, 2002)
2	Signal Theory	3, 4	Hard and Soft Signals Signal Sender Signal Receiver Signal Cost Informational Signals Interpersonal Signals	(Bafera & Kleinert, 2023; Connelly et al., 2010; Kok et al., 2020; Spence, 1973)
3	Resource-Based View	3	Internal Resources External Resources Competitive Advantage Firm Performance Dynamic Capabilities	(Barney, 1991; Makadok, 2001; Winter, 2003)

1.4 Research Philosophy & Methodology

To develop new knowledge by engaging in this study, the researcher must acknowledge the influence of unconscious assumptions and beliefs in interpreting data. At times, the reality of the phenomenon (ontological assumptions) can affect the research (Goles & Hirschheim, 2000). For instance, for a while, the ontological assumptions in small business lending considered soft information best suited to small firms, while large firms were best suited to hard information. Recently, researchers have recognized that this is not a strict either-or situation. The best predictions occur when hard and soft information are combined (Berger & Udell, 2006). It is clear that depending on the reality, the researcher's ontological assumptions may shape the focus of the study. Furthermore, assumptions about what constitutes acceptable knowledge (epistemological assumptions) and the belief in the importance of human values (axiological assumptions) significantly influence the research process (Bryman, 1984; Saunders et al., 2009). Continuing with the small business lending example, if the researcher considers quantitative data as more critical than narratives and values inclusivity in knowledge generation, they will likely frame the research question to reflect their epistemological assumptions and include various participants to ensure diverse perspectives.

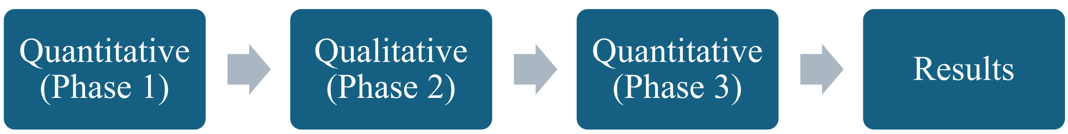
Management research is guided by five main management research philosophies: positivism, interpretivism, critical realism, postmodernism, and pragmatism (Saunders et al., 2009). Positivism emphasizes the use of scientific methods that produce generalizable results. This scientific focus implies that the ontological assumption of positivism is that reality is objective, observable, and external (Park et al., 2020). Similarly, critical realism shares the ontological assumption that reality is external. However, critical realists contend that while reality is external, it is also relative, and what is observed is only a part of the whole (Bhaskar, 2013). Unlike positivism, critical realists investigate the underlying mechanisms that go beyond mere observations. Credit scoring exemplifies the positivist philosophy in small business lending. Credit scoring systems rely on hard information, making them observable, objective data whose outcomes can be generalized. While critical realists acknowledge the importance of quantifiable data from credit scoring systems, critical realists also believe that this data may not fully explain loan repayment. Repayment can also be influenced by other factors such as economic conditions or access to resources.

Criticizing positivism, interpretivism argues that the empirical approach adopted in the natural sciences is unsuitable for studying human behavior. Unlike positivism, interpretivism holds that humans attribute meanings to their experiences and require context and a subjective lens (Alharahsheh & Pius, 2020; Avner et al., 2014). Postmodernism also criticizes the stance of positivism philosophy. Postmodernists emphasize the role of language in shaping reality and believe that language is biased, used to convey the dominant narratives (Saunders et al., 2009). For example, the concept of creditworthiness is a social construction shaped by institutional practices that marginalize small firms but benefit large firms. Postmodernists question the validity of these institutional practices. On the other hand, interpretivism focuses on the participants' subjective experiences. For example, interpretivism explores small business owners' perception of fairness in using credit scoring systems.

The research study adopted a pragmatic philosophy. The focus was on adopting a research design that aligns with the research questions (Saunders et al., 2009). To some extent, the assumptions behind the philosophies of qualitative and quantitative choice of methods drive the philosophical debate. The epistemological stance of qualitative methods leans towards theory-building. The belief is that reality is a social construct by social actors, which implies that social construct is better understood by collecting and understanding the perspectives of the social actors, groups, and individuals. Therefore, the purpose of the qualitative inquiry is not necessarily to locate causality but rather to ascribe meaning. In contrast, the foundations of quantitative methods lie in the philosophical beliefs of positivism, which promotes an objective approach to studying a phenomenon. In other words, knowledge creation should be based on observable and measurable strategies, and the results fulfill the criteria for generalizability. Some scientists in the academic community argue that the epistemology of both philosophies differs and should not be mixed.

Although the study was tempted to take sides in this debate and select a single method, the choice of method was based on a pragmatic question: What is the research question, and what method or strategy will elucidate the best results? As a result, the research study is divided into three phases (see Figure 1-1.). Phase 1 addresses the research question: *Compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate?* To measure and observe this effect, the study adopted a quantitative methodology. Phase 2 addresses the research question: *What signals do loan officers consider when performing small business loan application due diligence?* The study adopted a qualitative method in collecting and analyzing data to understand what signals and the meaning loan officers ascribe to these signals. Thereafter, using a quantitative study in Phase 3, the study measures the strength and effect of the signals identified in Phase 2 on loan officer's perception of loan application quality. In particular, it asks: *What is the effect of management and financial information quality signals obtained during due diligence on the loan officer's perception of the loan application's quality?*

Figure 1-1. Research Model



1.4.1 Population & Sampling

An excellent place to start for any study is to define the population clearly. A clear population definition allows the researcher to assess if the elements or a sample of the elements in the population qualify to partake in the study (Short et al., 2002) The population for Phase 1 consists of small firms in the consumer goods market and the food processing industry, such as selected entrepreneurs, consumer goods dealers, food processors, importers, and exporters of consumer goods. The respondents and a sample frame were drawn from directories maintained by the National Board of Small-Scale Industries (NBSSI), Ghana Bureau of Statistics, Association of Ghana Industries, and the Greater Accra Chamber of Commerce. A probability sampling technique was used to select the respondents. Probability sampling is best for statistical analysis because it gives every element in the population an equal chance of selection (Saunders et al., 2009; Short et al., 2002). The survey sample comprised 242 firms selected from the Greater Accra region of Ghana.

Using purposeful sampling, Phases 2 and 3 interviewed 24 loan officers and 193 loan officers from sampled financial institutions in Ghana, respectively. Phase 3 adopted purposeful sampling and found it appropriate for the study because of its focus on loan officers, a specific subgroup of financial institution employees. Loan officers are the only financial institution employees with the knowledge and skills relevant to the research question. An alternative sampling approach, such as random sampling, might include respondents without relevant experience. The composition of the participants in the study is a good reflection of the financial landscape in Ghana. The informants were recruited from the Accra and Kumasi Metropolitan Areas. The selection of this area is due to the high concentration of both financial institutions and small firms.

1.4.2 Data Collection

Data collected in Phases 1 and 3 were recorded using paper-assisted face-to-face (one-to-one) structured interviews/telephone interview methods. Paper-based questionnaires were developed and administered to recruited respondents. Considering that the study's sample size is quite large, using questionnaires in such a study has its advantages. Questionnaires allow the researcher to administer identical selected questions to many respondents in different locations (Denscombe, 2010; Miller, 1991). To administer the questionnaires, the researcher recruited five experienced interviewers. The enumerators underwent training on the study's objectives, contents of the instruments, strategies for approaching respondents, data collection techniques, data capturing, ethics in research, and role-plays. Following this, the research instrument was tested, and subsequently, it was revised.

Data collected in Phase 2 was captured using audio recorders. Semi-structured interviews were used to collect the participants' responses. The choice of semi-structured interviews allowed the interviewer to have a set of questions that guided the interview but at the same time accommodated deviations that shed light on the interviewee's understanding and opinion of a particular topic (Cohen, 2006). Due to COVID-19, the interviews were a mix of in-person and phone interviews.

1.4.3 Data Analysis

A key advantage of quantitative data is the possibility of standardizing it and presenting it in numerical form (Marshall, 2005). Firstly, data collected in Phases 1 & 3 underwent an audit to locate errors and legibility and check for consistency so that adequate measures can be taken to avoid incomplete information. Secondly, the data was exported into statistical software, allowing the researcher to automate the analysis procedure. Thirdly, the data underwent another audit (data cleaning) to further check for errors that might have occurred during coding or data entry. After that, a series of statistical tests were employed to test for significance and identify relationships between variables.

Data collected in Phase 2 were transcribed after the interviews were conducted. To analyze qualitative data, researchers recommend using inductive reasoning to make sense of the data (McMillan & Schumacher, 2001). Information captured and recorded during the interview were entered into a simple grid. Using a thematic coding system, the information recorded from interviews and captured in the grid was transformed into organized data, enabling better interpretation of the information gathered. Thematic coding and analysis enabled the researcher to identify patterns and find relationships between data categories (McMillan & Schumacher, 2001; Saunders et al., 2009). Visualization tools were used to create a picture of all coded data and its frequencies.

1.5 Summary and What Comes Next

The high loan rejection rates and large funding gaps in Ghana have serious implications for small firms' growth and survival. This thesis aims to draw the attention of academics to the need for a new line of inquiry in studying access to finance. This new approach involves examining various combinations of mixed information models (hard and soft information mixed models) and the due diligence phase in credit decision-making. To achieve its objectives, the thesis outlines a three-phase study to analyze qualitative and quantitative data collected from small firms in the consumer goods and food processing industry, as well as loan officers from financial institutions in Ghana.

This chapter continues into Chapter 2. Using financial institution types to classify three unique combinations of hard and soft information, Chapter 2 examines the effect of the three financial institutions' hard and soft information unique combinations on loan application success rates. To ground the hypothesis in theory, it reviews hard and soft information literature and lays the argument for categorizing the types of financial institutions. Following this, the chapter discusses the quantitative methodology and presents the results before generating insights in the discussion section. Chapter 3 follows with a qualitative study. Using qualitative data collected from 24 loan officers, it examines the financial institutions' application of due diligence when processing small firm loan applications. The study used thematic coding to identify patterns and relationships and further challenges the codes with signal theory. Insights based on the findings are generated in the discussion section.

The results from Chapter 3 were tested through a quantitative study in Chapter 4. Using resource-based view and signal theory as the theoretical framework, the study generated some hypotheses, which were tested using a statistical regression analysis. Based on the results, insights were generated in the discussion section. The thesis concludes with chapter 5, which summarizes the main findings of the research and emphasizes the connection between the findings and the research questions in chapters 2 to 4. It also discusses the contributions to theory and practice and suggests future research recommendations.

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Chapter 2 : The relevance of how financial institutions combine hard and soft information in small business financing.

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Oghenekome Umuerri, Tilo Halaszovich and Jürgen Bode

Abstract

Studies in small business lending have shown that bank size and lending technologies combining hard and soft information influence credit availability. However, empirical research has focused on the homogeneous mixed model framework, consisting of a singular combination of hard and soft information and little consideration of the effect of institutional type. Therefore, our study examines the effect of three unique combinations of hard- and soft information and the effect of different financial institutions, including non-banks, on the success rate of small business loan applications. Contrary to the conventional beliefs on soft information, our results suggest that the effect of a mixed model with a higher emphasis on soft information will not make small firms more transparent and increase their loan application success rate. Additionally, if the type of financial institution is considered, the positive effect of small-sized banks on credit availability does not extend to small-sized non-banks.

Keywords: Financial Institutions, Small Business, Hard Information, Soft Information, Lending Technologies, Developing Countries

2.1 Introduction

Small businesses are amongst the biggest employers and crucial to economic growth in most developing economies (Sharma et al., 2024; Oduro, 2020; Abor & Quartey, 2010). However, the institutional voids in many developing economies make it extremely difficult for markets to meet their full potential (Liedong et al., 2020; Easterly, 2001). This is especially true for the banking sector in many developing countries, which is often suffers from lack of coverage, low accessibility, and opaque structures (Gentile-Lüdecke et al., 2019). Consequently, small business lenders are often information-disadvantaged and are unable to make informed credit decisions (Calabrese et al., 2020). In Ghana, nine in every ten loan applications to banks are rejected (Bigsten et al., 2003). Given that banks are a significant source of financing, a better understanding of the relationship between lending practices deployed by financial institutions and access to finance is necessary for the growth of small business lending and, consequently, for the growth of small businesses.

Studies have classified bank lending technologies into transactional and relationship lending to distinguish the lending practices of financial institutions (Uchida et al., 2012; Brewer, 2007). Due to its verifiable nature, big banks such as commercial banks rely heavily on transactional lending when making loan decisions. Unlike relationship lending, the quantifiable nature of transactional lending makes it easy to scale. Hard, transferable information, such as financial statements and collateral, is synonymous with transactional lending. In contrast, soft information refers to tacit knowledge that is not easily transferable, such as the observation of personal reputation and management quality.

Compared to hard information, soft information is considered a better predictor of small business loan default (Cornée, 2019). It serves as an alternative to hard information for non-transparent borrowers. The traditional view in small business lending has been that small banks are better positioned to gather soft information. However, there is no compelling evidence suggesting the inability of loan officers in large banks to generate soft information (Uchida et al., 2012). In practice, small or large banks' lending technology is not characterized by only hard- or soft-information but a combination of both information types to evaluate loan applications (Berger & Udell, 2006). For instance, credit default models that combine hard and soft information are better at predicting the borrower's ability to repay (Grunert et al., 2005b). Given that loan applications are evaluated based on the combined use of hard and soft information, little attention has been paid to the relative importance of the combined use of hard and soft information and its relationship with loan application success. For example, compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate? Previous research has concentrated on single combinations of hard- and soft-information. Thus, this limits the exploration of alternative combinations. This gap in the literature warrants examination, especially considering that the unique circumstances and institutional voids in developing economies may call for a tailored mix of information types.

This study addresses the gap by examining how the unique combinations of hard and soft information at financial institutions influence the success rate of small business loan applications. The traditional literature on small business lending classifies hard- and soft information based on bank size. The theory suggests that large banks tend to focus more on hard information, while small banks are generally associated with soft information (Berger & Black, 2011). However, our study moves beyond bank size by using types of financial institutions to classify three unique and distinct combinations of hard and soft information. These combinations include financial institutions with *a low emphasis on hard information and a high emphasis on soft information*, financial institutions with a *balanced combination of hard and soft information,* and financial institutions with a *high emphasis on hard information and a low emphasis on soft information*. The dynamic nature of the financial institution landscape in Ghana, which largely consists of savings and loan companies, rural and community banks, and commercial banks, makes it ideal for this study. All three types of financial institutions in Ghana were identified and used as proxies for the unique combinations of hard and soft information.

Our data is collected from 242 Ghanaian small businesses, specifically within the agro-processing and consumer goods sector. The agriculture sector is vital to Ghana, employing about two-fifths of the population (MOFA, 2010). Therefore, it is essential to investigate this phenomenon and the mechanisms that significantly impact the availability of credit to small businesses. Our innovative approach examines various combinations of hard and soft-information lending technologies and the deviation from the norm of using financial institution type instead of bank size will significantly contribute to the literature on small business lending, particularly in Africa.

This paper will continue in section two by reviewing the extant literature and introducing the study's hypothesis and the theories underlying it. Section three will then discuss the study's methodology, and section four will present the results of the statistical regression analysis. Section five will conclude the paper by interpreting the findings and providing recommendations for policy, management, and future research.

2.2 Theoretical Frameworks

2.2.1 Hard- and soft-information in small business lending

In many financial markets, lenders and borrowers often find themselves at a disadvantage due to a lack of information, preventing them from making informed credit decisions. In many cases, knowledge is distributed unevenly, and the level of knowledge varies because people possess different amounts of information (Schmidt & Keil, 2013; Stiglitz, 2002). These disparities in knowledge stock or information level frequently stem from access to privileged information (Connelly et al., 2010). Akerlof (1970) and Stiglitz (2002) argue that when specific knowledge is concealed from one party during a transaction, it can lead to adverse selection and moral hazard problems. In the context of small business lending, adverse selection occurs when differences in information levels exist between lenders and borrowers, allowing one party to exploit privileged information for their benefit. Lenders facing such information asymmetrical problems are more likely to select high-risk firms which can, in turn, lead to the moral hazard of increasing the firm's monitoring (Hernández Santibáñez et al., 2020).

A well-documented effect of information asymmetry on small business lending is the imposition of high transaction costs. Financial institutions face significant transaction costs due to difficulty in gathering information, processing information, monitoring progress, and enforcing contracts (Aryeetey, 1994). High transaction costs can result in considerable uncertainty stemming from the difficulty in valuing, assessing, and observing both the target and the participants involved in the transaction. Institutional barriers such as inefficient legal institutions to protect property rights (Beck et al., 2008) and enforce contracts contribute to increased monitoring costs (Chit, 2019). A typical response by financial institutions to the information asymmetry problem is credit rationing. By failing to identify quality borrowers, financial institutions limit credit access even when the small firms are qualified and willing to pay a premium (Zambaldi et al., 2011).

A significant source of financing for small firms is banks. Compared to other sources of capital, banks are the number one source of financing for small business needs and projects (Lopes & Costa, 2017). Banks employ various lending technologies to screen and filter viable borrowers when appraising loan applications. The lending technologies used by banks can mainly be categorized into transactional and relationship lending (Berger & Udell, 2006; Brewer, 2007). Both lending technologies can be further characterized into information types. Research on small business lending characterizes transactional and relationship lending into hard and soft information, respectively (Cornée, 2019; Uchida et al., 2012). Due to economies of scale, lending technologies are suited to specific financial institutions. For example, the quantifiable nature of transactional lending makes it more attractive to large institutions (Berger & Black, 2011).

Relationship lending mainly refers to a heavy emphasis on using soft information. This soft information is gathered through interaction and engagement with the firm over time. Such interaction can include the provision of financial services such as savings, current account deposits and loans (Berger & Udell, 2006; Hernández Santibáñez et al., 2020). Although this process demands significant effort from the loan officer (Berger & Black, 2011), the financial institution gradually gathers proprietary information that would otherwise be difficult to obtain. Consequently, the loan officer often has insight into the business environment and the community where the borrower operates (Berger & Udell, 2006)From a risk perspective, soft information differs considerably from hard information as it encompasses details not visible in a balance sheet or credit score. For example, is the firm well prepared for future market shocks? How experienced is the manager/owner in deploying measures to combat such shocks? (D'Aurizio et al., 2015). Through careful observations, the loan officer can assess the potential.

Loan officer judgments that are not easily codifiable are considered soft factors influencing credit availability. Wilson (2016) analyzes interviews and focus group discussions with UK bankers and notes that the lending process requires the loan officers to judge each case individually. The author attributes the exercise of judgment by loan officers as the potential reason for differences in assessments of the same loan by different loan officers. Since the judgments exercised by the loan officers are based on soft information that is only accessible to the loan officer and not quantifiable, Wilson suggests this could allow for discrimination or bias. Despite the potential bias inherent in using soft information, its impact on credit availability remains significant in small business lending. To measure the effects of soft information on credit availability, researchers have employed various indicators such as the length of bank relationship, frequency of contact with the bank, firm management quality, and project quality (Bartoli et al., 2013; Brighi et al., 2019; Cornée, 2019; Song & Zhang, 2018). Bartoli et al. (2013) analyzed surveys from 5137 manufacturing firms in Italy and found relationship lending to significantly affect credit availability. Analyzing the loan data of a Chinese commercial bank, a similar study showed that compared to firms with established bank relationships, the probability of credit success is lower for firms without established bank relationships (Song & Zhang, 2018). Additionally, the study also finds that borrower reputation matters. They find a significant and positive relationship between credit success and firm reputation.

Transactional lending mainly refers to a heavy emphasis on using hard information or data to assess the viability of a loan application. The hard information can be obtained from financial statements, reports from third-party accounting firms, and credit scores from financial intermediaries (Berger & Udell, 2006). Using financial ratios, credit analysts can analyze past performance to determine the firm's financial health, predict future performance, and estimate whether the firm's future cash flows align with the expected repayment schedule. Some financial ratios that researchers use include the debt-to-asset ratio, profit-to-sales ratio, and current asset-to-current liability ratio (Bartoli et al., 2013; Brighi et al., 2019; Song & Zhang, 2018). Likewise, credit bureaus utilize hard data from the firm to generate credit scores. Given that small firms are closely linked with their owners, the predictive models employed by most credit bureaus for small businesses also take the owner's financial data into account.

The fear of bias in credit assessment has resulted in a persistent focus on quantifiable data. The prevailing notion is that hard data is transparent and reliable. However, when dealing with small businesses, is hard information always reliable? The findings from a study conducted by Abdulsaleh and Worthington (2016) suggest otherwise. The authors use qualitative methods to gain insight into the lending criteria used by loan officers in Libya. Interestingly, the study finds that loan officers perceive hard information, such as financial statement information from small businesses, as being often unreliable in Libya. A reason a loan officer provides is that small businesses present incomplete information to evade institutional conditions like taxation. Thus, institutional pressures encourage firms to engage in practices such as preparing unreliable financial documents.

Although lending technologies have been simplified into hard and soft information, most financial institutions combine both types when dealing with small firms (Berger & Udell, 2006). Grünert et al. (2005) analyzed the predictive power of financial (hard information) and non-financial (soft information) factors in credit ratings in predicting credit default. The study examined financial factors such as "current ratio, current liabilities turnover, and return on sales" and non-financial factors such as "management quality" and "market position." They found that credit rating models combining hard and soft information demonstrate better predictability than models with only hard or soft information. In another study, Cornee (2019) replicates the study by Grünert et al. (2005) and examines 389 loans disbursed by social banks. The hard information model used in the study consists of financial ratings, while the soft information model consists of factors such as "management quality" and "project quality." The author found the predictive ability of hard information models weaker than that of a combined model containing both hard and soft factors. Additionally, the study indicates that only the predictive power of project quality is significant. The results from Cornee's (2019) study on hard and soft information models further contribute to the development of our hypothesis.

In summary, research on small business lending has highlighted the importance of both hard and soft information in credit availability. On one hand, hard information is easier to scale due to its codifiable nature. On the other hand, while soft information plays a crucial role when dealing with non-transparent borrowers, it is difficult to transfer because it cannot be easily quantified. Studies have found a relationship between the size of financial institutions and their use of hard and soft information in loan decision-making. Large financial institutions tend to emphasize hard information more, whereas smaller institutions often leverage soft information when dealing with small firms. Nonetheless, financial institutions combine both hard and soft information to inform their small business lending decisions.

2.2.2 Financial institution type and small business lending in Ghana

According to the Ghana Banks and Specialized Deposit Act, 2016 (Bank of Ghana, 2024), commercial banks provide financial services that enable customers to save and deposit money, bridge cash shortfalls, and facilitate payment and investment products that generate wealth. However, evidence from many developing countries indicates that banks face significant challenges in deepening the financial sector. The heavy reliance of traditional commercial banks on hard information-based lending techniques often marginalizes small businesses due to their inability to provide documents or data that meet the lending criteria. Recognizing that commercial banks in Ghana may not be equipped to serve opaque borrowers, the Bank of Ghana implemented financial reforms that led to the creation of specialized financial institutions (Senzu, 2016). A part of those reforms was the establishment of non-banking and financial institutions to regulate informal lenders.

The 1993 Ghana Financial Institutions (Non-Banking) Law and the Non-Bank Financial Institutions Act, 2008 not only provided a legal framework but also created a means to eliminate inefficiencies in lending and other financial services providers such as finance houses, leasing companies, venture capital, and savings loans companies (Owusu-Antwi, 2009). Savings and loan companies emerged from the restructuring of Ghana's informal financing system known as "SUSU." The "SUSU" system allowed small-scale traders to deposit small amounts daily and collect the total amount deposited at the end of the month. The traders then used the accumulated savings as working capital for their businesses. The daily deposit enabled the savings and loans company to interact with the trader and gather daily soft information regarding their businesses. Savings and loan companies can screen for risky borrowers using the gathered information as a mechanism for assessment.

Table 2-1. Summary of the guiding principles for categorizing the different financial institutions in Ghana

Type of Institution	Lending Practice	Relationship to Informal Systems	Financial Institution Size	Combination of Information Type
Savings and Loan companies	SUSU/Group Lending	High	Small	Low Hard information, High Soft Information
Community & Rural Banks	Group Lending/ Individual Lending	Medium	Small	Medium Soft Information, Medium Hard Information
Commercial banks	Individual lending	Low	Large	High Hard Information, Low Soft Information

Another step towards deepening the financial sector in Ghana was the establishment of rural and community banks. Their goal is to serve marginalized groups lacking access to financial services. A key difference between rural and community banks and commercial banks is their inability to engage in foreign exchange activities and receive valuable goods such as precious metals (Steel & Andah, 2004). However, they are structured like commercial banks and regulated by the Bank of Ghana and the ARB Apex Bank Ghana. With a strong focus on serving rural customers and extending agricultural loans (Kadri et al., 2013), rural and community banks in Ghana adopted innovative lending techniques, including group-based lending. In contrast to individual lending, group-based lending involves disbursing loans to groups and leveraging the group to gather information and indirectly monitor the extended loans. Thus, by providing access to soft information from the group members that is otherwise not accessible by banks, the groups reduce the banks' cost of gathering and monitoring information. Data released by the Bank of Ghana (2024) lists 26 licensed savings and loan companies, 147 licensed rural and community banks, and 23 licensed commercial banks operational in Ghana.

Based on the background of the financial institutions, our categorization of the financial institutions in Ghana into three unique information type combinations is informed by the attributes of the financial institutions, such as the relationship and proximity to informal systems and the lending practices adopted. Research indicates that informal financial institutions have a comparative advantage over formal financial institutions when it comes to gathering information on small borrowers (Aryeetey, 1994). Given the connection between savings and loan companies and informal systems, along with their relative strengths in the soft information intensive "SUSU" system, we categorize savings and loan companies as *low hard information and high soft information.* This categorization results in our study presenting its first unique combination of hard and soft information. This unique combination allows our study to depart from the limitations of a homogenous mixed model framework, which typically comprises a singular combination of hard and soft information. Within this new framework, a central question guiding our research is: "Compared to a non-balanced combination of hard and soft information, would a balanced combination of hard and soft information increase small business loan application success rate?” Based on this discussion, we expect a balanced combination of hard and soft information will yield more favorable results and make opaque borrowers more transparent. In other words, we expect that increased transparency will enhance small firms' loan application success rate. Conversely, we expect that financial institutions that are categorized as using a non-balanced combination, represented by the category *Low hard information and high soft information,* would produce opposite results. To test this assumption, we formulate our first hypothesis.

Hypothesis H1: A low emphasis on hard information combined with a high emphasis on soft information in lending decision-making negatively influences small businesses' loan application success rate.

We continue categorizing unique combinations of information types by focusing on commercial banks in Ghana. Commercial banks have been well-documented as well-positioned to scale hard information-based lending technologies. Therefore, commercial banks are categorized as

High hard information and low soft information. The categorization of commercial banks, along with our line of reasoning in formulating the first hypothesis leads us to the second hypothesis.

Hypothesis H2: A high emphasis on hard information combined with a low emphasis on soft information in lending decision-making negatively influences small businesses' loan application success rate.

Our final categorization focuses on rural and community banks. Due to the adoption of soft-information-based technology, such as group-lending, by these banks, in combination with banking regulations that mandate objective credit assessments (hard-information-based), we classify them as *Medium hard information and Medium soft information.* We consider Medium hard information and medium soft information to be a balanced combination of hard and soft information. This categorization of rural and community banks, along with our assumption of the importance of a balanced use of both types of information in evaluating loan applications leads us to formulate our final hypothesis.

Hypothesis H3: A balanced combination of hard and soft information positively influences small businesses' loan application success rate.

Figure 2-1. Conceptual Model and Hypotheses

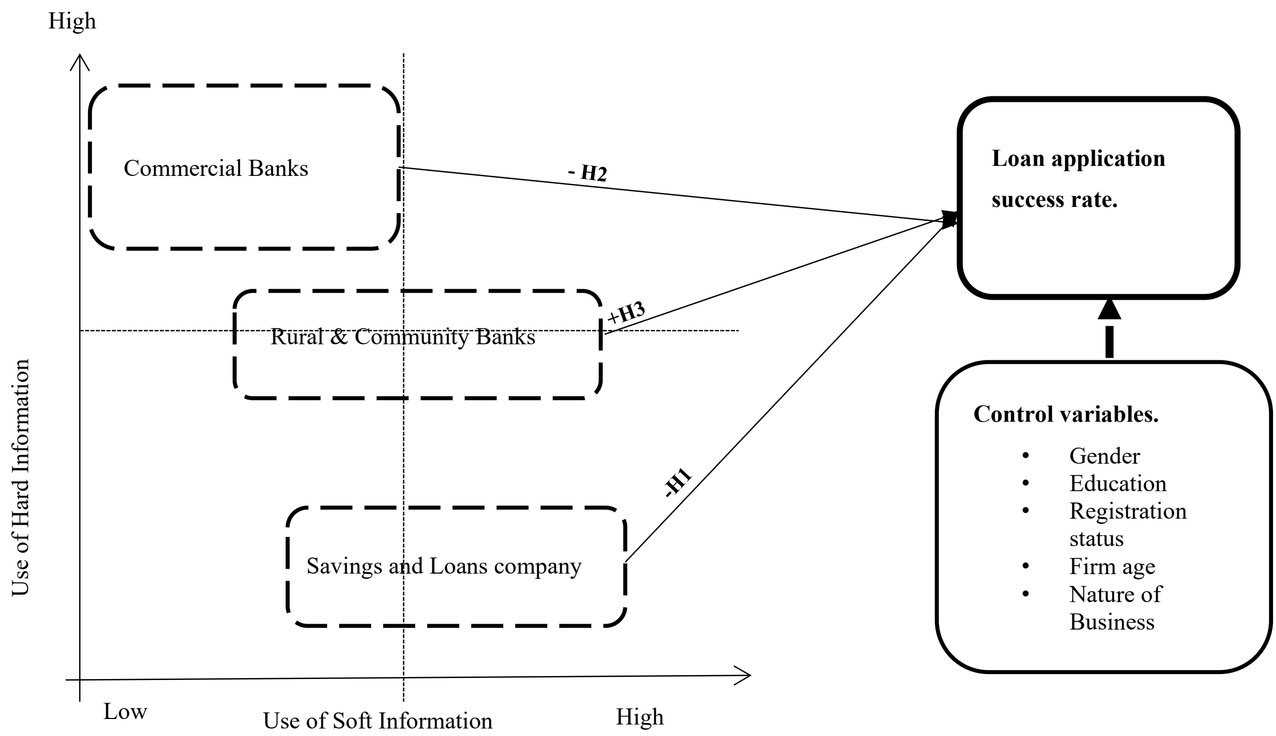

Figure 2-1 shows the conceptual framework of the study. The framework illustrates a 2x2 matrix that classifies formal financial institutions in Ghana into quadrants. The quadrants indicate the intensity of the mix of hard and soft information. The framework assumes that the information model adopted by the financial institution is a mix of soft and hard information. The x-axis represents the intensity of soft information, while the y-axis represents the intensity of using hard information. This implies that, inherently, the financial institutions in the lower quadrants are characterized by a higher emphasis on soft information and a lower emphasis on hard information. In contrast, financial institutions in the upper quadrants are characterized by a higher emphasis on hard information and a lower emphasis on soft information. The financial institutions, savings and loan companies, rural and community banks, and commercial banks exemplify the different information mix models and the hypothesis that this study seeks to test. Loan application success rate is the dependent variable that the different information mix models seek to explain.

2.3 Data and Methodology

2.3.1 Data source

The population of this study consisted of micro, small, and medium enterprises in the consumer goods market and the food processing industry, such as entrepreneurs, consumer goods dealers, food processors, importers, and exporters of consumer goods. The survey sample size was 242 firms selected from six cities covering five main regions in Ghana. The interviews were administered in the following regions and cities - Western region (Takoradi), Central (Cape Coast), Ashanti (Kumasi), Greater Accra (Accra and Tema), Northern (Tamale) Greater Accra region of Ghana. This area was selected due to the high concentration of consumer goods and food processing SMEs. The respondents were drawn from directories of the regional Ghana Chamber of Commerce and the Ghana Enterprise Agency. A probability sampling technique was used to select the respondents. The sampling procedure was as follows: First, we developed a sample frame and allocated identification numbers to the companies. After that, a probability sampling technique was used to ensure the respondents had a fair chance of being selected. Finally, the sample frame was partitioned (stratified sampling) into two groups (consumer goods and food processing) to reduce sampling variations. After data cleaning and screening of missing data, our final sample consists of 128 firms, which equals 51.2 percent of the surveyed firms.

2.3.2 Description of variables

The study's dependent variable, "loan application success rate," is a ratio derived from the respondent's response to "How often have you applied for a loan in the last five years?" and "How many of your application attempts were successful" before the interview took place. The small businesses' responses were captured as follows: None (value 0), Once (value 1), Twice (value 2), Thrice (value 3), and More than thrice (value 4).

Table 2-2. Variables Definition

Variables	Definition
Dependent variable	
LOAN_SUCCESS_RATE	how often have you applied for a loan / how many of your application attempts were successful
Hard-information variable	
COLLAT	1 if the respondent has collateral
AUDFIN	1 if the financial statement has been audited in the last two years
Soft-information variable	
FINKNOW	1 if a financial plan was prepared without help
Low Hard, High Soft-information variable	
LOHI_INSTITUTE	1 if applied to a savings and loan company
Medium Hard, Medium Soft-information variable	
MIDMID_INSTITUTE	1 if applied to a rural and community bank
High Hard, Low Soft-information variable	
HILO_INSTITUTE	1 if applied to a commercial bank & online lender

The study pulls from previous literature to explain loan application success rates and considers basic characteristic variables such as firm age, gender, education, registration status, and nature of business (Cassar, 2004; D’Aurizio et al., 2015; O. O. Fatoki & Asah, 2011).

Table 2-3. Correlation Matrix

Descriptives/Correlations

		N	Mean	1	2	3	4	5	6	7	8	9	10	11	12	13
1	LOAN_SUCCESS_RATE	104	76,6827	1												
2	GENDER	126	0,44	0,065	1											
3	EDUCATION	120	1,09	0,088	0,032	1										
4	NO_EMPLOYEES	121	0,22	0,069	-0,133	0,093	1									
5	FIRM_AGE	119	2,03	0,193	-0,043	-,190*	,191*	1								
6	REG_STATUS	123	0,61	,233*	0,012	,206*	,238*	0,018	1							
7	NATURE_BUSINESS	126	0,7302	0,145	,332**	-0,025	-,315**	-0,053	0,072	1						
8	COLLAT	121	0,68	,277**	-0,112	,283**	-0,082	0,078	0,050	0,091	1					
9	AUDFIN	128	0,19	0,136	-0,068	,269**	0,105	0,032	,255**	0,148	,199*	1				
10	FINKNOW	121	0,6612	-0,156	0,033	-0,045	-0,068	-0,178	-0,137	-0,163	-,186*	-,607**	1			
11	LOHI_INSTITUTE	128	0,5078	-,214*	0,032	-,362**	0,044	0,077	-0,127	-0,016	-,343**	-,288**	0,139	1		
12	MIDMID_INSTITUTE	128	0,1484	0,120	-0,020	0,040	-0,045	0,059	-0,140	-,194*	,189*	-0,144	0,054	-,424**	1	
13	HILO_INSTITUTE	128	0,3281	0,128	0,011	,358**	0,003	-0,073	,247**	0,146	,238**	,432**	-,212*	-,710**	-,292**	1

The responses to gender are recorded as female (value 0) and male (value 1), education level is recorded as no formal education (value 0), basic education (value 1), secondary education (value 2), tertiary education (value 3), professional education (value 4) others (Value 5), number of employees (NO_EMPLOYEES) were captured as 1-5 (value 0), 6-29 (value 1), 30-99 (value 2) and 100+ (value 3), age of firm was captured as follows: less than 2 years (value 0), 2 to 5 years (value 1), 6 to 10 years (value 2) 10 years + (value 3), business registration status is recorded as unregistered (value 0), registered (value 1). Audited financial statement variable is a dummy variable (AUDFIN) of responses to the question "In the last two fiscal years, have your establishment's annual financial statements been checked and certified by an external auditor?" while financial knowledge is a dummy variable (FINKNOW) to the question "How did you develop your financial plan for your loan application?". These variables serve as the control variables used during the regression analysis.

After that, the variables related to financial institutions, the nature of business, audited financial statements, and financial knowledge were introduced to the model. The variables related to financial institutions are dummy variables of responses to the question, "Which financial institution have you approached for funding?" The institutions introduced into the model are savings and loan companies, rural and community banks, and commercial banks.

Based on the literature review, we group the financial institutions into three information groups. Savings and Loan companies are grouped into "High soft information_ Low hard information," Rural and community banks are grouped into "Medium soft information_ Medium hard information," commercial banks are grouped into "High hard information_ Low soft information." The nature of business is a dummy variable that responds to the question "nature of business activity," consumer goods (value 0), and food processing (value 1).

Using a regression model, we estimate six models to test the hypotheses. The baseline model (Model 1) contains firm characteristics variables mentioned in the literature, while Model 2 includes two hard information variables and a soft information variable. The hard information variables are the firm's ability to provide collateral (COLLAT) and audited financial statements (AUDFIN), while the soft information variable is financial knowledge (FINKNOW). Models 3, 4, 5, and 6 contain financial institutes that characterize different emphases in the information-based lending technology used in evaluating loan applications. The variable LOHI_INSTITUTE (Low hard information and High soft information) characterizes financial institutions (savings and loans companies) in Ghana that lay more emphasis on soft information.

The variable MIDMID_INSTITUTE (Medium hard information and Medium soft information) characterizes Ghana's financial institutes (Rural and Community Banks) that apply a balanced approach. The variable HILO_INSTITUTE (High hard Information and Low soft information) characterizes financial institutes (commercial banks and online lenders) in Ghana that lay more emphasis on hard information.

2.4 Results

Six linear regression models are reported in Table 2-4. The last model uses the MIDMID_INSTITUTE sample as the base group. The first model in the regression results analyzed the impact of firm characteristics on the success rate of loan applications. From the six control variables, only the age of the firm is significant at 10 percent ($p < 0.10$). This result suggests that older firms have a higher chance of loan application success. In the second model, only COLLAT is significant. The results suggest that small firms with collateral (hard information) positively influence loan application success rates.

The regression result of Model 3 rejects hypothesis H1 and indicate that the coefficient of savings and loan companies is both negative and significant at the 5 percent level ($p < 0.05$). This suggests that, compared to other financial institutions, there is a negative influence on the success rate of loan applications submitted to a financial institution characterized by low hard information and high soft information. Consequently, the likelihood of small firms' loan applications being rejected by savings and loan companies is greater than that for other financial institutions included in the survey. Interestingly, Model 3 also reveals that the nature of business and audited financial statements is significantly negative. This indicates that hard information, such as audited financial statements from small firms, is associated with a lower success rate, especially when controlled for loan applications at LOHI Institute.

The regression result of Model 4 rejects Hypothesis 2. The result is not significant for the variable HILO_INSTITUTE. This suggests that, compared to other financial institutions, there is no significant influence on the success rate of loan applications sent to a financial institution characterized as practicing high hard information and low soft information. However, the model finds COLLAT to be significant and positive.

The regression result of Model 5 supports Hypothesis H3. The model indicates that the coefficient of rural and community banks (MIDMID_Insitute) is positive and significant at the 5 percent level ($p < 0.05$). This suggests that, compared to other financial institutions, there is an increase in the success rate of loan applications sent to a financial institution whose lending technology is characterized as a balanced combination of hard and soft information (medium soft, medium hard information). The results also show that the nature of business has a positive and significant effect on the success rate of loans when controlled for loan applications at MIDMID_Institute.

Table 2-4. Regression Results

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	CONTROL	HS	LOHI	HILO	MIDMID	LOHI_HILO
	Coeff	Coeff	Coeff	Coeff	Coeff	Coeff
GENDER	0,045	0,035	0,061	0,036	0,052	0,071
EDUCATION	0,100	0,072	0,021	0,055	0,076	0,037
NO_EMPLOYEES	0,061	0,073	0,111	0,070	0,129	0,134
FIRM_AGE	0,218*	0,204	0,191	0,207	0,157	0,177
REG_STATUS	0,171	0,204	0,179	0,214	0,152	0,148
NATURE_BUSINESS	0,178	0,189	0,243*	0,194	0,250*	0,255*
COLLAT		0,218*	0,148	0,215*	0,139	0,123
AUDFIN		-0,178	-0,272*	-0,241	-0,084	-0,175
FINKNOW		-0,041	-0,059	-0,052	-0,020	-0,042
LOHI_INSTITUTE			-0,306**			-0,438**
HILO_INSTITUTE				0,101		-0,220
MIDMID_INSTITUTE					0,279**	
R Square	0,130	0,160	0,229	0,166	0,223	0,245
Adj. RSquare	0,059	0,042	0,107	0,034	0,100	0,112

*p < 0.10; ** p < 0.05; *** p < 0.01

To further test hypothesis 2, we add the variables "LOHI_INSTITUTE" and "HILO_INSTITUTE" to Model 6. The model shows the coefficient of savings and loan companies to be negative and significant at 5 percent ($p < 0.05$), while commercial banks were found to be not significant. That means, compared to financial institutions whose lending technology is characterized as a balanced combination of hard and soft information, financial institutions whose lending technology is characterized as *Low hard and high soft information* significantly negatively influence the success rate of loan applications. However, the coefficient of the variable COLLAT is significant and positively influences loan application success rate. We will come back to these findings in more detail in our discussion.

2.5 Discussions & Recommendations

Accessing external funds from many financial institutions in developing economies necessitates undergoing a loan application process. However, research on small business lending indicates high loan application rejection rates in Ghana (Bigsten et al., 2003). Examining the dynamics of the lending technologies that financial institutions employ will enhance our understanding of small business lending in developing economies. In our efforts to advance theory, our findings reveal three empirical and theoretical implications. First, our empirical model diverges from the conventional homogenous mixed model, which usually contains a singular combination of hard and soft information in credit decision-making. Unlike (Cornée, 2019; Grunert et al., 2005b), it allows for more combinations of hard and soft information while examining the effect of financial institution type on the loan application success rateThe traditional small business lending literature classifies hard- and soft information by bank size; large banks are linked with hard information, while small banks are associated with soft information (Berger & Black, 2011). Furthermore, our approach enables us to explore the effect of financial institution type on credit availability and, by classifying different financial institutions, to identify three distinct combinations of hard and soft information used by financial institutions.

Second, in an extended lending framework that includes more than one combination of hard and soft information inputs, the loan application success rate increases in an environment where a balanced combination of hard and soft information is applied. Although soft information is associated with small business lending, our results suggest that if we allow for different combinations of hard and soft information, the effect of a model with a higher emphasis on soft information will not increase the loan application success rate of small firms. This contradicts the findings of (Cornée, 2019). Their mixed model, with a higher emphasis on soft information, was a better predictor than a mixed model with a lower emphasis on soft information. Our results suggest quite the opposite. A potential explanation for the results could stem from the objective differences between default prediction and loan application success rate. In other words, these two objectives emphasize different stages of the lending process the relative importance of hard and soft information can vary. Another explanation of the differences in result is the differences in model specification. Unlike (Cornée, 2019), our model used financial institution type as a proxy for hard and soft information lending technology.

Third, the different combinations of hard and soft information have implications for the literature on alternative credit scoring. Historically, credit scores are algorithms based on hard financial data used to evaluate credit card risks (Njuguna & Sowon, 2021). However, with technological advancement, credit scoring models have expanded into other financial services and incorporated alternative data forms. The positive effect of a balanced combination of hard and soft information found in this study suggests small business credit scoring models should not overly rely on hard information. Instead, alternative credit models should give equal weight to both soft and hard information in credit scoring. This may require credit scoring models to be adaptable and flexible to accommodate variations in institutional settings and borrower characteristics.

Furthermore, the observation of a model with a higher emphasis on soft information leads to a decrease in loan application success rate is partly observed in (Berger & Black, 2011). Their study finds that financial institutions with a comparative advantage in soft information lending assign less value to small firms. A potential reason for this observation in Ghana could be that although lenders have a comparative advantage in soft information lending, the final decision still requires similar weighted hard information.

From the study's results, we identify two interesting managerial implications. First, the positive and significant increase in the loan application success rate of firms that applied to rural and community banks in Ghana suggests the type of institution that small firms request credit from matters. Ghanaian small firms are probably better off applying to small-sized banks than small-sized non-bank financial institutions. One possible reason for the difference in lending outcomes between these two types of institutions is that the lending technology or mixed information models used by rural and community banks in Ghana are more effective at evaluating the potential of small firms compared to savings and loan companies. Thus, small-sized Non-Bank Financial Institutions could retain viable borrowers more successfully by adopting similar information mix models used by rural and community banks.

According to research related to bank competition, to stay competitive, banks are likely to increase the efficiency of the lending technology adopted (Berlin & Butler, 2002; Zambaldi et al., 2011). A second management implication is that from a competitive perspective, large-sized banks and small-sized non-bank financial institutions in Africa may need to increase screening efficiency so that low-risk borrowers are not left out. This could be achieved by revising adopted small business lending technologies and reducing information production costs. However, industry consolidation, such as the acquisition of small-sized banks by large-sized banks, may increase the competitiveness of large-sized banks because acquisitions will allow for integrating existing lending technology from small-sized banks against building capabilities from scratch.

We recognize that it may be too early to suggest policy implications. However, a key finding in our study is the dominance and increasing effect of a balanced combination of hard and soft information over a non-balanced combination of hard and soft information on small business loan application success rate. Policymakers in Africa could increase access to finance by promoting such information models amongst financial institutions. This could be achieved by incentivizing knowledge sharing across different financial institutions. A second policy implication involves initiatives that support small business development. Such initiatives could expand training on firm capital structure, potential lenders, and lending requirements. Empowering small businesses with the necessary information about the financing landscape would help them identify which financial institutions they are better off applying to for loans. Finally, policies that support small businesses in times of crisis, such as the recent COVID-19 pandemic, could target potential lenders such as rural and community banks and provide tax incentives or guarantee instruments that support small firm financing.

Our study is not without its limitations. Future research would support this line of inquiry by examining distinct populations and further decomposing the information models into distinct combinations of lending technologies, particularly if we consider that the mixed information models used in this study did not specify the lending technologies contained in the models or combinations of hard and soft information. It would be an opportunity for other researchers to examine the lending technologies that fit the lending framework used in this study and their effect on either credit availability or loan default prediction.

Our study faces some generalization issues. First, the results from a sample of small consumer goods and food processing businesses in Ghana may not be attributable to other industries in Ghana. Second, financial institutions in Ghana are not likely to be a good representative of European or American financial institutions. Future research could examine other industries and compare results between developed and developing economies.

A further limitation of our study is that, in developing economies, the differences in success rates may imply discrimination due to the information model used. In contrast to mixed models with a high emphasis on hard information, a balanced mix of hard and soft information might indicate decreasing levels of objectivity with each additional loan application. Although there is the likelihood of a strengthened relationship, there is equally the likelihood of losing objectivity. Future research could further examine the possibility of decreasing levels of objectivity.

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2.6 Appendix A: Questionnaire

SURVEY ON SME FINANCING IN THE CONSUMER GOODS AND FOOD PROCESSING SECTOR IN GHANA

The project "**Building Expertise and Training for Growth in the Consumer Goods and Food Processing Industry in Ghana (BET Ghana)"** is undertaking a survey to understand the dynamics of SME financing in this industry. The results from the research would better inform any policy interventions and strategies to employ to help streamline and improve the activities of businesses in the sector. You have been sampled for the study. Hence, your views are very much important to the study. Every information you provide would remain highly confidential. Thanks for accepting to participate in the study.

1. Contact Information and Socio-demographic Characteristics of Respondents				
		Tick (√)		Tick (√)
Respondent ID			**Education level**	
Name of respondent			No formal education	1
Name of business/establishment			Basic education	2
Location of business			Secondary education	3
Have you changed location since the founding of business?	Yes	1	Tertiary education	4
	No	2	Professional education	5
Is current location owned or rented	Yes	1	Others	6
	No	2	Others please specify	
Gender	Male	1		
	Female	2		
Age of respondents				
Role of respondents	Owner	1		

	Employee	2		
General Work experience			**Work experience at current industry**	Tick (√)
	Less than 1 year	1	Less than 1 year	1
	1 – 2 years	2	1 – 2 years	2
	2 – 3 years	3	2 – 3 years	3
	3 – 4 years	4	3 – 4 years	4
	4 – 5 years	5	4 – 5 years	5
	5 – 10 years	6	5 – 10 years	6
	More than 10 years	7	More than 10 years	7
Tel: Fixed line				
Cell number				
E-mail:				
Digital address if available				

2a. Age of firm	Tick (√)	**2b. Registration Status**	Tick (√)	**2c. Corporate Status**	Tick (√)
> 2 yrs	1	Registered	1	Sole Proprietorship	1
2-5 yrs	2	Unregistered	2	Partnership	2
6-10 yrs	3			Limited Liability	3
10+ yrs	4			Corporative Society	4
				State Enterprise	5

2d. Type of firm	Tick (√)	Tick (√)	**2e. Source of raw material**	Tick (√)
Domestic		1	Imported	1
International		2	Partly local partly imported	2
Global		3	Local	3

3. Business activity			
3a. Total Assets (Write GHS equivalent)	Tick (√)	3b. Number of Employees	Tick (√)
≤ $10,000	1	1 – 5	1
$10,001-$100,000	2	6 – 29	2
$1,000,001-$1,000,000	3	30 – 99	3
		100+	4

3. Business activity			
3c. Number of Employees at founding of business	Tick (√)	3d. Nature of the Business Activity	Tick (√)
1 – 5	1	Food processing	1
6 – 29	2	Consumer Goods	2
30 – 99	3	**If Consumer Goods is selected, Go to Question 4**	
100+	4		

3. Business activity	
3e. Indicate nature of the food processed:	Tick (√)
Fruits	1
Vegetables	2
Seeds (sesame, flaxseed)	3
Roots and tubers	4
Cereal Grains	5

Meat	6
Fish	7
Spices	8
Legumes	9
Meat-beaf and pork	10
Poultry	11
Others, please specify…	

4. General Finance			
4a. Does your establishment have a current/savings account?	Tick (√)	4b. At this time, does your establishment have an overdraft facility?	Tick (√)
Yes	1	Yes	1
No	2	No	2

4. General Finance			
4c. What percentage of this establishment's total material inputs or services purchased were purchased on credit?	Percentage **(Please write percentage below)**	4d. What percentage of this establishment's total annual sales of its goods or services were sold on credit?	Percentage **(Please write percentage below)**
Purchased on credit		Sold on credit	

4. General Finance	
4e. Has the availability of funds affected your operations in any way?	
Yes	1
No	2
If No, please explain	

5. Loan history			
5a. How often have you applied for loans in the last 4 years?	Tick (√)	5b. What was the main reason why you did not apply for loan in the last 4 years? (multiple response possible)	Tick (√)
None	1	No need for a loan	1
Once	2	Application procedures were too complex	2
Twice	3	Interest rates were not favorable	3
Three times	4	Collateral requirements were too high	4
More than three times	5	Size of loan and maturity were insufficient	5
		Did not think it would be approved	6
		Others	7
		Others please specify….	

5. Loan history			
5c. How many of your loan application attempts were successful?	Tick (√)	5d. Which financial institution/s have you approached for funding? (multiple response possible)	Tick (√)
None	1	Savings and loans companies	1
One	2	Community bank	2
Two	3	Rural bank	3
Three times	4	Commercial bank	4
More than three times	5	Online money lenders	5

	Investment bank	6
	Venture Capital	7
	Business angels	8
	Grants from Government	9
	Grants from donors	10
	Others	11

Others please specify (5d)....

5. Loan application history	
5e. Referring only to the most recent loan or line of credit, which financial institution/s have you successfully received a loan from? (multiple response possible)	Tick (√)
Savings and loans companies	1
Community bank	2
Rural bank	3
Commercial bank	4
Online money lenders	5
Investment bank	6
Venture Capital	7
Business angels	8
Grants from Government	9
Grants from Donors	10
Others	11

Others please specify (5e)....

5. Loan application history			
5f. Referring only to this most recent loan or line of credit, what type of collateral was required? (multiple response possible)	Tick (√)	5g. Referring only to this most recent line of credit or loan, what was the approximate value of the collateral required?	Amount (USD)
Land, buildings under ownership of the establishment	1	Value of collateral (write amount)	
Machinery and equipment including movables	2		
Accounts receivable and inventories	3		
Personal assets of owner (house, etc.)	4		
Other forms of collateral not included in the categories above	5		

5. Loan application history			
5h. In the last 2 fiscal years, have your establishment's annual financial statements been checked and certified by an external auditor?	Tick (√)	5i. Referring only to the most recent line of credit or loan, which financing need was successfully granted? (multiple response possible)	Tick (√)
Yes	1	Startup capital	1
No	2	Expansion capital	2
		Capital expenditure	3
		Working capital	4
		Others	5
		No financing need	6

Other financing need, please specify....

5j. How do you finance your establishment's working capital, that is its day-to-day operations (multiple response possible)? Please Tick (√)

Internal funds or retained earnings	1
Purchases on credit from suppliers and advances on credit from buyers	2
Borrowed from Savings and loans companies	3
Borrowed from Community bank	4
Borrowed from Rural bank	5
Borrowed from Commercial bank	6
Borrowed from Online money lenders	7
Borrowed from other non-bank financial institution	8

Other non-bank financial institutions, please specify....

5. Loan application history			
5k. How did you model your operations/financial model in your loan application	Tick (√)	5l. Are you willing to pay for professional advice when modelling your operations/financial model in a loan application?	Tick (√)
Modelled it myself	1	Yes	1

Contracted it to someone to model	2	No	2

5. Loan application history		
5m. In your view, which criteria are important for your bank in granting loans to you? (multiple response possible)		Tick (√)
1	Duration of planned repayment (How long it takes to repay debt).	1
2	Financial health of the firm (capital/asset ratio).	2
3	Firm's profitability (current profits/sales ratio).	3
4	Firm's growth (growth of sales).	4
4	Ability of the firm to post (not personal) real estate collateral.	5
5	Ability of the firm to post tangible non-real estate collateral	6
6	Support by a guarantee association (e.g., loan, export, R&D, etc.).	7
7	Personal guarantees by the firm's manager or owner.	8
8	Managerial ability of firm's management team.	9
9	Strength of the firm in its market (number of customers, commercial network).	10
10	Intrinsic strength of the firm (e.g., ability to innovate).	11
11	Firm's external evaluation or its evaluation by third parties.	12

12	Length of the lending relationship with the firm.	13
13	Loans are granted when the bank is the firm's main bank.	14

Others specify....

5. Loan application history			
5n. To what extent would you say availability of funding is a factor in the success of your business?	Tick (√)	5o. Referring only to your most recent line of credit or loan, which of the following terms best describes your experience of applying for the line of credit or loan?	Tick (√)
To a very large extent	1	Very easy	1
To a large extent	2	Easy	2
To an average extent	3	Fair	3
To a small extent	4	Complex	4
To a very small extent	5	Very complex	5

5. Loan application history			
5p. How long was the waiting period before loan was approved?	Tick (√)	5q. Which of the following terms best describes your experience of applying for the funding with the third party?	Tick (√)
Less than 1 month	1	Very easy	1
1 month	2	Easy	2
2 months	3	Fair	3
3 months	4	Complex	4
More than 3 months	5	Very complex	5

5. Loan application history			
5r. Do you have collateral?	Tick (√)	5s. If yes, please indicate in which form	Tick (√)
Yes	1	Tangible. E.g. fixed property (land & building)	1
No	2	Intangible. E.g. shares, investments,	2
	3	Personal surety (Guarantor with positive networth)	3
	4	Others	4
	5	Very complex	5

If Others, please specify (collateral)

Chapter 3 : Loan Application Due Diligence and Financing Small Firms in Africa

Oghenekome Umuerri, Tilo Halaszovich and Jürgen Bode

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Abstract

Banks gauge and verify the business potential when processing small business loan applications by conducting due diligence on the firm. Although research has examined the factors that influence small business financing, little attention has been given to understanding the due diligence process that informs credit decision-making. We address this gap using signal theory to analyze and develop insights from 24 qualitative interviews. Our study identified 11 key hard and soft signals loan officers use to access small business credit risk during due diligence. The key signals include key person risk, change in leadership risk, articulation of company value, adaptation to change, separating business and personal finances, personal reputation, transparency and willingness to share information, data accuracy and completeness, regular account operation, faulty budget and turnover assumptions and legitimacy of collateral. The implications for SME finance theory and practice are discussed.

Keywords: Due Diligence, Loan Application, Small Firms, Banks, Africa,

3.1 Introduction

The opaqueness of most small firms in many African countries makes it difficult for lenders to identify viable loan applications (Cassar, 2004). As a result, most small businesses have challenges in accessing finance (Malesu & Syrovátka, 2024; Nega & Seid, 2016). In Ghana, about 10% of loan applications in Ghana are successful (Bigsten et al., 2003). To reduce the likelihood of default, lenders conduct due diligence on loan applications to verify the claims of the firms' capabilities (D. J. Cumming et al., 2019). This study examines how lenders use due diligence to identify viable small business loan applications.

Due diligence goes beyond screening the firm's loan application documents, it involves background checks, site visits, and crosschecks (D. J. Cumming et al., 2019; Skaife & Wangerin, 2013). It also includes external sources to determine risk areas in the firm. Proper due diligence helps in valuing the firm accurately and validates or refutes the statements of facts about the business (warranties) captured in the agreement. It helps the financial institution better understand the market potential, growth opportunity, degree of competition, and the firm's operational capabilities (Delta Publishing Company, 2009; Tissen & Šneidere, 2011). To further stress its importance, an empirical study found due diligence to have a positive impact on predicting future firm performance (Cumming & Zambelli, 2017).

3.2 Significance of the research

The importance of due diligence has been highlighted in various finance-related studies (Cumming & Zambelli, 2017; Howson, 2017; Morrison et al., 2008). However, considering that banks play an important part in small firm financing (Lopes & Costa, 2017), little attention has been given to the role of due diligence in debt financing, particularly how it influences small firms in African countries. This study addresses this gap by examining the bank's application of due diligence when processing small firm loan applications. The high loan rejection rates make Ghana an exciting location to study debt financing challenges in emerging markets. Because it highlights the need to examine access to finance in Ghana further. The ultimate goal is to increase the success rate of loan applications and to reduce the time wasted in creating and processing unsuccessful applications. The research results will provide practical recommendations for small businesses, financial institutions, and other ecosystem actors.

3.3 Literature review

Information asymmetry exists because of knowledge gaps between two or more parties (Abdelhafid & Mohammed, 2019). Under such conditions, the information-advantaged party, usually the signaler, sends information whose full observability is privy only to the sender. In the context of small business lending, the non-transparent nature of small businesses in emerging markets has been widely documented. As a result, lenders are unable to directly observe borrower capabilities and face challenges in evaluating credit risk. That is why lenders employ due diligence to examine the quality of the reported data in submitted loan applications.

3.3.1 The role of due diligence in firm financing

Due diligence interrogates the financial data to understand the reason behind past performance and predict future cashflows (financial due diligence), cross-checks market potential with industry experts, examines the competitive landscape (commercial due diligence), and reveals potential dispute and litigations (legal compliance), seeks to determine the operational risk and opportunities by understanding the day-to-day operations of the business. (Delta Publishing Company, 2009; Tissen & Šneidere, 2011; Wexler & Connor, 2007). However, due to the complexity of business transactions, due diligence has expanded to include other areas such as market, taxation, environment, sales, information and technology, insurance and organization and human resources, operations, organizational culture, assets, and property (Breitzman & Thomas, 2002; Bruner, 2004; Howson, 2017; Tissen & Šneidere, 2011).

3.3.2 Signal theory as a framework for the analysis

In signaling theory, the main actors are the signaler and the receiver. The signaler sends a signal to the receiver. Signals could be intentional or unintentional (Zhou et al., 2020). Meaning the signaler may not deliberately send out specific signals. On receiving the signal, the receiver interprets the signal and sends feedback to the signaler. The ability of the signal to produce the desired result (efficacy) depends on the signal's observability and cost (Bafera & Kleinert, 2023; Spence, 1973). High signal costs could motivate the signaler to send false signals. Low-quality signalers seeking the benefits of high-quality signalers but unable to carry the cost of producing high-quality signals may send false signals (Spence, 1973). Through the lens of signal theory, borrower signals can be interpreted and contextualized. It is in the interest of small businesses to send positive signals about their capabilities to lenders even when these signals are false. Signal theory could help make sense of the role of signals in closing information gaps between borrowers and lenders.

3.4 Research questions and methodology

Considering that due diligence is an important element in credit decision-making, a question that comes to mind is what signals are considered during due diligence in credit financing. In particular, we ask the research question below.

RQ: What signals do loan officers consider when performing small business loan application due diligence?”

This study uses qualitative data collected from lenders and analyzes the reported common challenges that occur during its implementation. For this study, we built a sample framework of seven financial institutions to recruit the informants. Twenty-four loan officers from the sampled financial institutions recruited from Ghana's Accra and Kumasi metropolitan areas were interviewed. Table 3-1 provides a visual overview of the sampled firms and informants. Using a thematic coding system, we generated 39 primary in vivo codes from the 41 quotes captured in the grid. After that, by comparing the codes with theoretical concepts in the small firm finance literature, we derived 11 second-order codes from the primary. Table 3-2 shows key illustrative quotes highlighting the 11-second order codes.

---- Table 3-1 here ----

3.5 Findings

Based on the analysis of the interviews conducted, the study identified 11 signals from small businesses that alert loan officers on the loan application quality. We classify the signals into hard- and soft-based signals.

3.5.1 Soft Signals

Key person risk

When appraising loan applications, it is important that the lender understands how the business operates. Lenders want to know the management constraints that may hinder loan repayment. For example, what resources are available to management, and are they efficiently allocated? To what extent do the business constraints affect business? However, during the investigation process, lenders often encounter challenges, as illustrated in the quotes below.

> “Sometimes you have one person who is the proprietor doing everything…… So, you can clearly see that the business actually revolves around the person. If the person is not there, nothing will happen.
>
> (Informant 01, Merchant Bank)

Their small size and limited resources characterize most small firms. Due to the limited resources, owners of small firms double as managers and are required to play different roles in the firm (Jennings & Beaver, 1997). Therefore, small businesses with highly skilled managers will likely benefit when owner-managers can take on different roles. This inadvertently leads to high dependency on owner-managers in making decisions in almost every aspect of the business (Prahalad & Bettis, 1986). Our informants identify this lack of separation of function and high dependency on owner-managers as a *key person risk,* which may create inefficiencies when the owner-manager is indisposed and unable to manage the business.

---- Table 3-2 here ----

Change in leadership risk.

The high dependency of owner-managers also raises questions about the issue of change in leadership. The informants illustrate this observation in the quotes below.

> “And sometimes, with the issue of directors, this may be a one-man show. At some point, there may be a change of directors, so if your director is changed and their new one decides not to do this or that, sometimes it affects the arrangement that you’ve done already.”
>
> (Informant 08, Development Bank)

Considering the occurrence of COVID and the fact that most small firms do not practice formal human resource management (Rozsa et al., 2021), what happens when a change in leadership is warranted? From a lender's perspective, a break in the system may lead to possible delays or defaults in loan repayments. Therefore, overcoming the barrier of inadequate succession planning (Bruce & Picard, 2006a) may send the right signals to lenders.

Articulation of company value

Another important dimension in management quality is the borrower’s ability to convey and defend relevant information. The informants illustrate this observation in the quotes below.

> "So some of the challenges is that a lot of them are into business, but they do not know……. But how much sales are you making that goes into your production? You know all those financials these are simple things you expect that once they're into business all these things should be on their fingertips"
>
> (Informant 08, Commercial Bank)

The ability of management to convey the firm's value often earns them a good reputation and a "certifying effect" from financial institutions (Chemmanur & Paeglis, 2005, p.332). Likewise, when lenders encounter financial information that is not well-prepared, the borrower is unable to present and defend the information submitted. It leaves the lender with an unfavorable impression of the borrower. Aside from the fact that the lender is unable to get a true picture of the business, it suggests that the borrower has no deep knowledge of the business.

Adaptation to change.

Due to the ever-changing environment and business landscape, it is important that small businesses adapt and position themselves to withstand external shocks. One participant illustrates this issue with the below quote.

> "But something came along the line, but they didn't have the knowledge or how to control or overcome those challenges, so it brings them down, and it becomes a problem."
>
> (Informant 12, Commercial Bank)

The business environment is constantly changing, technology has greatly disrupted the landscape, and most recently, we have witnessed the impact of COVID-19 on small businesses (Kalogiannidis, 2020; Savrul et al., 2014). These external shocks tend to affect the firm's ability to deliver on its obligation. Some financial institutions perceive small businesses to be of high risk in the event of a crisis (Eggers, 2020; Piette & Zachary, 2015). Therefore, to minimize risk, lenders interrogate the business to gauge management's ability to adapt to changes in the business environment. From the lender's perspective, although external shocks or events that disrupt are challenging to plan for (Liguori & Pittz, 2020), the ability to adapt to change, particularly in challenging environments, is a positive signal from the borrower (D'Aurizio et al., 2015).

Separating business and personal finances.

Some participants also identified the need for owners/managers to separate business activities from their private and personal activities. This issue is illustrated in the quote below.

> “You go to the field and realize that some use their normal savings account to do business;
>
> (Informant 03, Development Bank)

A key factor for the failure of most small businesses is the low adoption of best-practice accounting. Due to resource constraints, small firms do not consider investment in accounting systems a priority (Putra, 2019). Concerning banking habits, our informants in this study observe similar deposit behaviors. Small business owners often do not adhere to accounting standards and engage in irregular transactions. For example, payments for goods and services delivered may sometimes be transferred to the owner’s personal bank account. This makes it difficult for the lender to monitor and track cash flow and business performance. Additionally, it suggests governance issues within the business and makes the borrower unattractive to lenders.

Personal Reputation

Another challenge identified by the informants is the reputation of the loan applicant. The issue is illustrated in the quote below.

> “For example, last month, I wanted to give a loan, somebody brought a friend to me that he wanted a loan, I did everything, and I visited a woman that I have given a loan to before. Her house was closed to the new person who was applying for the loan, so I ask her do you know this woman? She said yes, and I said okay, I want to work with her, so how are her behavior and character? She said this woman doesn’t have good character. She said she has witnessed before a certain man gave her a loan, and when the time was due for her to pay, she insulted them, so I shouldn’t give the loan to her.”
>
> (Informant 06, Microfinance Organization)
>
> “Credit is a science and an art. You can’t particularly pinpoint that if you have this, then you are 100% there, you could have the best of cash flows, but your character could be bad. That means you are a danger to your own self ………. There is a risk factor, so we

> will be looking at you and not look at only your cash flows only to end up having problems with your repayment."

(Informant 11, Commercial Bank)

Due to their relatively small size and nature of small firms, it is difficult to separate the owner of most small businesses from the actual business. Therefore, the character of the owner or the business and personal reputation comes into question. Lenders want to know how others perceive them (Ansong et al., 2017). Are they reliable? Are they trusted in the community they do business with? Do their suppliers trust them? A positive assessment and feedback tend to improve the loan application because it serves as a basis for trust and transparency.

Transparency and Willingness to share information.

A recurring challenge identified by the informants is the lack of transparency and the willingness to share information with lenders. Some informants highlight this issue using the quotes below.

> "And sometimes you may not get the truth. The challenge is that you may not get the true picture if we do not do certain things, we may not get the true financial position of the business. They may hide something from you."
>
> (Informant 10, Commercial Bank)
>
> "Easy when you have met the minimum criteria, difficult when a lot of information you are giving us is not adding up. Sometimes become in person or with the accountant, then when you engage them, we realize that the information they give is quite different from what is written on paper, so you feel there's a problem and you begin to doubt. Bankers are doubters already, so the little suspicion, they begin to doubt you."
>
> (Informant 11, Commercial Bank)
>
> "So sometimes the financials that they have prepared, you realize that it is not a true reflection of what goes on in their business. They either make it very good but don't represent the true state of their business and sometimes provide collateral that if you go to the lands to check, you realize that it is not even in their name, so later in the future, when the person defaults that is when you realize that. And also, evaluations, they get

people to give them higher evaluations which is not so good, so for us to cut that problem, we have our own valuers."

(Informant 13, Commercial Bank)

As indicated in the above quotes, lenders cannot get a proper picture if the borrower is not transparent and hides information. Lack of transparency creates information asymmetry and results in one party having the privilege of more information than the other party (Schmidt & Keil, 2013; Stiglitz, 2002). Financial institutions are often challenged with these problems when engaging with small firms. To curb this risk, financial institutions adopt lending techniques such as credit scoring and financial statements to verify and appraise credit requests (Berger & Udell, 2006). Additionally, as part of the due diligence process, they conduct various crosschecks and on-site visits to verify information (Cumming et al., 2019). Therefore, lenders want full disclosure and transparency to make a proper assessment. Lack of transparency and falsifying records may be red flags when processing loan applications.

3.5.2 Hard Signals

Data accuracy and completeness

One participant highlighted the challenges peculiar to record keeping and data during the due diligence. The issue is illustrated in the quotes below.

> " Mostly, these SMEs are more informal, so sometimes it becomes an issue, but physically you can see that the person is doing well, but there is no document to back up, and you know, in the banking world, we have to see their written evidence, you can't just go to the shop and say the way people buy from them the person can perform well, or maybe every month you export this and that, it doesn't work like that. But they don't have documents, and most of them do not have permits, so before you can give it to them, you have to coach them before and sometimes too, they don't have any financial or every year they don't do any audit to see if their business is performing well. That is an issue. So if you ask them to bring their auditor's reports some of them don't have it. So it becomes difficult. And it delays the process, because before you get all these things then maybe you need the money urgently to clear your goods or to buy goods, and before you go through all this it becomes difficult to meet their time you may need all these things, so these are some of their challenges." (Informant 12, Commercial Bank)

> "Some of them don't keep proper records. They don't track the business, so they don't know whether the business is declining or booming. They don't see it themselves unless you go in, and in the course of the appraisal, you come up with those things for them."
>
> (Informant 14, Private Bank)

Data accuracy and completeness refer to the quality of the firm's record-keeping. Small businesses with sound record-keeping systems will likely attract funding from financial institutions (Tagoe et al., 2008). Small firms' lack of record or data completeness is often a result of low levels of accounting knowledge (N. A. Ismail & King, 2007). Inadequate record-keeping delays the loan processing time, which may, in turn, affect the firm's cash flow and waste the lender's resources. Suppose the business is in urgent need of a loan. In that case, the continuous back-and-forth clarification communication between the lender and the borrower may delay the approval or give a negative signal to the lender. Additionally, bad record-keeping results in the small business being unable to provide all the relevant information necessary for the lender to decide and may result in the rejection of the loan application.

Regular account operation

The informants also identified the challenge of no prior bank relationship or activity in their bank accounts. The informants illustrate the issue in the quote below.

> "They don't build their accounts; they only wait for when they are stranded, then they come for a loan……some of them also don't use their account but only come at a time that they need the loan. So, in this case, the bank may not be able to do much for them."
>
> (Informant 02, Commercial Bank)

When small businesses regularly interact with financial intermediaries through financial products or services, they build relationships with the intermediary (Berger & Udell, 2006). From the lender's perspective, constant interaction provides insight into the business. That means when firms regularly operate their bank account, lenders have visibility into the firm's transactions and can tell its story. The lender can observe the size and frequency of weekly sales transactions. How much cash is at the bank at any time, and what is the business obligation to suppliers? Loan applications not supported with bank account information may force the lender to adopt alternative methods of interrogating the business, which may not necessarily build confidence in the loan application.

Faulty budget and turnover assumptions

Another informant identified *faulty budget and turnover assumptions* as a key challenge. The issue is illustrated in the quotes below.

> "Some of the customers, too, don't know the exact they need to put into the business. They just mention any amount without thinking of the implications. They just need the money, but they don't analyze how to use the money and how much to pay every month. So, for some, the only thing they need is money. They don't actually plan well on the funds that they will actually require for the business. Sometimes, it may take less than what they actually require. Some, too, need more money to acquire the goods…."
>
> (Informant 16, Commercial Bank)

To understand the business, lenders investigate its operations by analyzing various business performance measures such as cash flow cycle, production efficiency, and supplier terms and agreements. A lack of understanding of the cash flow cycle has been identified as a key reason small businesses fail (Uwonda et al., 2013). The cash flow enables the lender to grasp the strength of the cash flow and identify seasonal patterns. On the other hand, understanding the production capacity and the supplier arrangement helps the lender assess productivity and the firm's relationship with its supplier. From its assessment, the lender can determine if the cash flow meets the loan repayment plan, the supplier's ability to meet its obligation, and the efficiency levels of production machines.

Legitimacy of collateral

Another challenge one of the informants identified is the quality of the collateral supporting most loan applications. The challenge is illustrated in the quote below.

> "It becomes difficult when the customers don't have security, and thus the problem is most of the SMEs do not have security. So we take the landed property, most of them have, or they may have built already but probably not registered in their name."
>
> (Informant 02, Commercial Bank)

Lenders often require borrowers to provide some form of security to reduce the risk associated with issuing credit and in the event of a default. A common lending method lenders adopt is collateral-based lending (Berger & Udell, 2006). Collateral could be cash, a physical asset such as land and buildings, inventory, or receivables (Blazy & Weill, 2013). However, in the case of physical assets, one of the applicants reported situations where the property was not legally registered. Therefore, lenders prefer collateral with a legal status.

3.6 Discussion and Conclusion

By studying what signals loan officers consider when performing small business loan application due diligence, the findings extend the small business lending literature and the application of signaling theory by identifying key hard and soft signals that lenders find important during the due diligence of small business loan applications. It draws the attention of small businesses to those signals that lenders consider important during the due diligence process. Owner/managers should take seriously how they communicate the quality of their management operations. They should ensure that they derisk the business by ensuring that the business is not totally dependent on them, invest in capabilities to adapt to a changing environment, invest in building a solid business and personal reputation, ensure honest and transparent communications with lenders and observe accounting best practices such as separating business operations from personal accounts and keep accurate and complete records.

Second, our findings draw the attention of small business owners/managers to the quality aspect of loan applications. They need to be mindful that loan application success chances are likely not to increase if they invest only in the loan eligibility criteria. Lenders are interested not only in the ability to execute but also in the extent of the ability. So, borrowers should also recognize that the due diligence phase is equally as important as providing the loan entry requirements and invest in the due diligence process accordingly.

Lastly, from the context of lenders, our findings help identify those signals that should be included in loan officer management training. Such inclusion would make inexperienced loan officers more aware of important signals when implementing due diligence and appraising loan applications.

Our study is not without limitations. We do not claim that our findings represent the nature of due diligence in other locations. However, this contribution could serve as a foundation for further investigations. Future research could either attempt to replicate this inquiry in other environments or focus on testing and measuring the effect of the identified signals on loan application success or quality. For example, how significant are transparency and willingness to share information on loan application quality?

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Table 3-1. Overview of sampled firms and informants

Informant	Bank	Informant role	Age	Gender	Nationality
1	Merchant Bank	Loan Officer		Male	Ghanian
2	Commercial Bank	Loan Officer	36	Male	Ghanian
3	Development Bank	Loan Officer		Male	Ghanian
4	Savings and Loans company	Loan Officer	31	Male	Ghanian
5	Microfinance Organisation	Loan Officer	32	Male	Ghanian
6	Rural Bank	Loan Officer	33	Male	Ghanian
7	Development Bank	SME Relationship Manager/Loan Officer		Male	Ghanian
8	Commercial Bank	Loan Officer		Male	Ghanian
9	Commercial Bank	Loan Officer	33	Male	Ghanian
10	Investment/Commercial Bank	Head of Credit/Loan Officer	37	Male	Ghanian
11	Commercial Bank	Loan Officer	34	Female	Ghanian
12	Commercial Bank	Loan Officer	32	Female	Ghanian
13	Private Bank	Loan Officer	35	Male	Ghanian
14	Commercial Bank	Loan Officer	44	Male	Ghanian
15	Private Bank	Loan Officer	42	Male	Ghanian
16	Commercial Bank	Loan Officer	43	Male	Ghanian
17	Commercial Bank	Loan Officer	32	Male	Ghanian
18	Commercial Bank	Loan Officer	35	Male	Ghanian
19	Commercial Bank	Loan Officer	34	Male	Ghanian
20	Commercial Bank	Loan Officer	35	Male	Ghanian
21	Commercial Bank	Loan Officer	45	Male	Ghanian
22	Commercial Bank	Loan Officer	34	Female	Ghanian
23	Commercial Bank	Loan Officer	-	Male	Ghanian
24	Rural Bank	Loan Officer	30	Male	Ghanian

Table 3-2. Key illustrative quotes

Conceptual dimension	**Key illustrative quotes**
Key Person Risk & Change in Leadership	"Sometimes you could have one person almost doing everything. They don't have somebody who is for instance responsible for their finances, so they don't have somebody who is in charge of accounts. Sometimes you have one person which is the proprietor doing everything, he is the M.D. (Managing Director), he is the operation manager, he is H.R., he is everything"
	"There are some of them if they are not around, even sales will not be brought to the bank. So, you can clearly see that the business actually revolves around the person, if the person is not there nothing will happen. Even there could be salespeople there who have sold but they are waiting for him to give instruction before they take the money to the bank. So that is also one other thing"
Articulating Value	"Accounts not properly prepared, most of these SMEs don't even understand the accounts prepared, so being the accountant or finance officer, you realize that what they've brought is not a true picture of their business but because they don't understand they present it like that"
	"You see when the person does not have the financial it becomes difficult in explaining certain things to them"
Adaption to change	"But something came along the line, but they didn't have the knowledge or how to control or overcome those challenges, so it brings them down and it becomes a problem"
Separating business and personal finances	"You go to the field and realize that some uses their normal savings account to do business meanwhile this account has limited volumes on them"
	"The bank is not interested that you take a loan and then call on your personal saving to pay off the loan. The account operation will tell a story that the business can pay off the loan."
Transparency & Willingness to share information	"And sometimes you may not get the true, the challenges is that, you may not get the true picture if we do not do certain things, we may not get the true financial position of the business. They may hide somethings from you."

	“Easy when you have met the minimum criteria, difficult when a lot of information you are giving us are not adding up. Sometimes become in person or with the accountant then when you engage them, we realize that the information they give is quite different from what is written on paper, so you feel there’s a problem and you begin to doubt, bankers are doubters already so the little suspicion they begin to doubt you.
	“So sometimes the financials that they have prepared you realize that is not a true reflection of what goes on in their business. They either make it very good but doesn’t represent the true state of their business and sometimes provide collateral that if you go to the lands to check you realize that it is not even in their name, so later in the future when the person defaults that is when you realize that. And also, evaluations, they get people to give them higher evaluations which is not so good so for us to cut that problem we have our own valuers”
	“The main challenge is the inspection of the stock. Some customers have a lot of stocks. Some customers do not use the money for the intended purpose they stated. Some also get the stocks on credit and others take some items from friends just to deceive the inspectors.”you can access the facility. Because the bank has to secure its interest. So when those things are met, then they finally proceed in credit in your account.
Data accuracy and completeness	“ Mostly, these SMEs are more informal so sometimes it becomes an issue, but physically you can see that the person is doing well but there is no document to back up and you know in the banking world we have to see their written evidence, you can’t just go to the shop and say the way people buy from them the person can perform well, or maybe every month you export this and that, it doesn’t work like that. But they don’t have documents and most of them to do not have permits so before you can give it to them you have to coach them before and sometimes too, they don’t have any financials or every year they don’t do any audit to see if their business is performing well that is the issue so if you ask them to bring their auditors reports some of them don’t have so it becomes difficult. And it delays the process, because before you get all these things then maybe you need the money urgently to clear your goods or to buy goods and before you go through all this it becomes

	difficult to meet their time you may need all these things, so these are some of their challenges.”
	“Some of them don’t keep proper records they don’t track the business, so they didn’t know whether the business is declining or booming they don’t see it themselves unless you go in and in the course of the appraisal you come up with those things for them”
Regular account operation	“They don’t build their accounts; they only wait for when they are stranded then they come for loan.”
	“Some of them also don’t use their account but only comes at a time that they need loan. So, in this case the bank may not be able to do much for them”
Legitimacy of Collateral	“It become difficult when the customers don’t have security, and thus the problem, most of the SMEs do not have security. So we take landed property, most of them have or they may have built already but probably not registered in their name”
Faulty budget assumptions	“So normally when the person submitted a formal request then we look at their six-month turnover, the production turnover….”
	So exaggeration, exaggeration is one, and then two, they do not make full disclosure
	“Maybe a customer does export, he sends the product but the ship delays and so the buying company says you did not meet our schedule, so we have used another buyer, meanwhile the ship is already gone, the product is there already and here is the case the customer also took a facility to prepare the container. So, that way the person doesn't have an option he has to look for somebody else to sell to and he will not be able to repay the loan and then there is going to be a problem. Because he may need another money to send a container to be able to pay for the other but that is not feasible any longer, so, those are some of the challenges.”
	“Our business would be doing well but if your cash flow maybe an issue. For instance, those who do filling stations their cash flows are very good, but their margins are very small... But personally, if there’s something I should stay firm to then I’ll go with cash flow because we link mostly with cash flow.”

	"Some of the customers too they don't know the exact they need to put into the business, they just mention any amount without thinking of the implication. They just need the money, but they don't analyze how to use the money and how much to pay every month. So, some, the only thing they need is the money, they don't actually plan well on the funds that they will actually require for the business. Sometimes, it may take less than what they actually require, some too need more money to acquire the goods. An example is the cement sellers, sometimes they need more because, last year, every month they were increasing the price of cement. If you don't know the trend of the business, you always find it difficult to work. Because prices could increase at any time. Thus, if you don't have any back up then you have to go look for money and top up. Because the capital is going into the business, and you are not making much. If they are able to stock and they increase the prices, they gain from the stock they have."
Management Reputation	"For example, last month I wanted to give a loan, somebody brought a friend to me that he wanted a loan, I did everything, and I visited a woman that I have given loan to before, Her house was closed to the new person who was applying for the loan, so I ask her do you know this woman? She said yes and I said all okay, I want to work with her so how is her behavior and character? She said this woman she doesn't have good character, she said she has witnessed before a certain man gave her a loan and when the time was due for her to pay she insulted them so I shouldn't give the loan to her."
	"The credit is a science and an art, you can't particularly pinpoint to if you have this then you are 100% there, You could have the best of cash flows but your character could bad, that's you are danger to your own self ………, There is a risk factor so we will be looking at you and not look at only your cash flows only to end up having problems with your repayment."

Appendix B: Interview Guide

QUALITATIVE SURVEY ON SME FINANCING IN THE CONSUMER GOODS AND FOOD PROCESSING SECTOR IN GHANA

The following universities - Hochschule Bonn-Rhein-Sieg, University of Applied Sciences, University of Cape Coast and the Jacobs University Bremen are collaborating on a project entitled "**Building Expertise and Training for Growth in the Consumer Goods and Food Processing Industry in Ghana (BET Ghana).**" As part of the project, there is the need to undertake a qualitative survey to understand the various decision events involved in an SME bank loan application. The survey targets small businesses (SMEs) and loan officers in financial institutions. The results from the research would better inform the efforts of both management and policy interventions and strategies to help streamline and improve the activities of businesses in the sector. You have been selected for the study. Hence, your views are very much important to the study. Every information you provide would remain highly confidential. Thanks for accepting to participate in the study.

Loan Officer Questionnaire

Respondent ID			Location:	
Gender:			Digital Address:	
Age:			Bank experience (years)	
Email:			**Tel:**	

General questions

1. Please describe the process of an SME loan application in your financial institution.
2. In your view, which criteria are important for your financial institution in granting loans to SMEs?

3. In your view, during the processing of a loan application, what are the common challenges that occur during the due diligence of SME loan applications?
4. What factors or circumstances would make it easy/hard for you to accept an SME's loan application?
5. What do you see as the advantage/disadvantage of accepting an SME's loan application?

Chapter 4 : The Role of Signaling Management and Financial Information Quality in Small Business Lending in Ghana

SUBMITTED TO THE JOURNAL OF THE KNOWLEDGE ECONOMY

Oghenekome Umuerri, Tilo Halaszovich

Abstract

Information asymmetry complicates lenders' decision-making processes and makes it difficult for them to qualify borrowers. However, lenders use due diligence and various hard and soft signals to identify quality loan applications. To make credit decision-making more transparent, our study examines the effect of management and financial information quality signals on loan officers' perception of a small business loan application quality during the due diligence phase. Analyzing quantitative data collected from 193 loan officers in Ghana, the study's results show that signals such as the ability to adapt to change, preparedness for a change in leadership, the ability of small firms to defend information about the business to lenders adequately, and accurate and complete records signal good management and financial information quality and improve loan officers' perception of the quality of the loan application.

Keywords: Financial Institutions, Small Business, Hard Signals, Soft signals, Management Quality, Financial Information Quality

4.1 Introduction

A widely documented problem in small business lending is the information gaps between lenders and borrowers (Calabrese et al., 2022; Li et al., 2024). Information asymmetry complicates the decision-making process and makes it difficult for lenders to qualify borrowers. To bridge the information gap, banks establish loan eligibility criteria and consider factors such as the quality of the management team, financial records, and commercial potential. (Agyapong et al., 2011; Grunert et al., 2005b; Zhang et al., 2015). An essential step in the loan application process involves verifying the borrower's claims in the application, often referred to as due diligence. (Tissen & Šneidere, 2011; Umuerri et al., 2024; Wexler & Connor, 2007). Although studies have tried to shed light on those factors that influence credit decision-making, most studies have focused on the final decision event in the loan application process, giving little attention to other phases in the loan application process, such as due diligence This paper is of central interest because it focuses on the due diligence decision process and highlights the signals lenders use to close the information gap when verifying claims in the loan application.

After receiving a small firm's loan application, lenders must examine it to determine the viability of the firm's proposal (D. J. Cumming et al., 2019). The lender's goal is to assess whether the firm can repay the loan if the application is approved because the ability to repay the loan is one of the most important deciding factors for approval. Therefore, a firm with positive cash flow signals to the lender that it can meet its short-term obligations (Afrifa & Tingbani, 2018; Gupta et al., 2014). To understand the firm's cash flow, the lender will likely examine the financial records submitted in the loan application, such as the firm's financial statement. Another important deciding factor that lenders must consider is the quality of management responsible for executing the firm's plans (De Franco et al., 2017; Rahaman & Zaman, 2013). Strong management ability instills confidence that the right competencies can deliver on its promise. It can adapt operations during turbulent times such as natural disasters, recognize opportunities in a changing business environment, and maintain business continuity even in firm management or leadership changes (Harries, 2021).

Considering that the loan application process involves more than just the entry requirements for applying and the final analysis of all information gathered about the firm, this paper seeks to make credit decision-making more transparent by examining the impact of the information carriers or signals of management and financial information quality on loan application quality on an equally important decision event in the loan application process. In particular, the paper asks, “What is the effect of management and financial information quality signals obtained during due diligence on the loan officer's perception of the loan application’s quality?” The study analyzes quantitative data collected from 193 loan officers in Ghana to explore this research question.

Access to finance for small firms in emerging economies has continued to be a significant issue for private sector participants and policymakers. While access to financing for small businesses is a global problem, the challenges are more pronounced issues are more pronounced due to the institutional gaps in emerging economies. The choice of Ghana for this study reflects the dynamic nature of its financial market. On one hand, Ghana has made progress in reforming the financial sector, including the establishment of specialized financial institutions for small businesses (Senzu, 2016). On the other hand, the funding gap for small- and medium enterprises (SMEs) in Ghana is estimated at \$6.1 bn (Vicente, 2020), which has profound implications for small firms' operational capabilities and Ghana’s economic growth. This positions Ghana as an ideal case for this study. (Vicente, 2020) This study aims to direct the focus of borrowers and lenders to the due diligence phase of the loan application process. Thereby bringing to the forefront the importance of due diligence in informing the lender’s final decision. Moreover, considering that small firms are mainly resource-constrained, the study will measure the effects of the signals that loan officers use as quality proxies during loan application due diligence. This will aid firms in making resource allocation decisions when preparing for the due diligence phase of the loan application process. Similar to Kok et al., (2020, pp.2), the choice of measuring signals rather than data or information aligns with the study’s interest in measuring “pieces of information.”

This paper will continue in section two by reviewing the extant literature and introducing the study’s hypothesis. Thereafter, it will discuss the research methodology adopted and present the results of the regression analysis. In the final section, the paper will discuss its findings and provide recommendations for management, policy, and future research.

4.2 Theoretical Framework

4.2.1 A Brief Review of SME Lending

Small businesses face significant financial and credit constraints, which affect their ability to invest in resources that promote growth (Aryeetey, 1994; O. Fatoki & Odeyemi, 2010). However, some studies suggest that a small firm’s characteristics may determine its ability to access credit. Cassar (2004) states that a firm's characteristics, such as the firm's size, matter to financial institutions. The author's findings indicate that larger firms are more likely to secure credit from financial institutions than smaller firms. Age is also a significant factor in accessing credit. Younger firms in their early development are less likely to access credit from financial institutions than older firms. Fatoki and Asah (2011) note that the probability of a younger firm, existing less than five years, obtaining credit is lower than that of older firms. A firm's ownership structure often signals to many financial institutions its levels of trustworthiness and reliability (Cassar, 2004; Gompers et al., 2010). Owner-managers with high levels of education and vast industry experience are likely to be perceived favorably by lenders.

High transaction costs pose a significant challenge for small firms seeking to access credit. To mitigate the risk of default, lenders must dedicate resources to monitor these small firms. Moreover, in the event of a default, lenders are likely to incur legal costs. These additional costs make lending to small firms less appealing to lenders. Consequently, the additional effort required often leads to tedious negotiations that may discourage small firms from borrowing (Beck et al., 2005).

Using qualitative research, Fletcher (1995) compares the SME risk assessment practices of Scottish and English banks in the United Kingdom in credit applications of SMEs. While there were differences in their final assessments, the author noted that gearing, information, and security were important assessment criteria. To elaborate on the differences, the author observed that Scottish banks tended to favor entrepreneurs with low-security profiles by placing greater emphasis on their capabilities. The author attributes these potential differences in assessment to the fact that Scotland has "lower levels of security". Scottish banks depended on other measures to assess risk. As such, these rules and regulations shape the overall assessment processes of lenders.

However, investigations into African lending criteria have revealed slight differences from European findings. In a quantitative study, Agyapong et al. (2011) analyzed the ranking of lending criteria reported by loan officers in Ghana. Loan officers identified the following as the top four important criteria: "intended purpose of the loan, repayment of the previous loan, repayment schedule, and type of business activity to be the top four important criteria while the C.V.s of the client were the least important criteria considered during loan assessment (pp.135)".

In another study, Domeher et al., (2014) investigate whether the claims of a preference for informal financing over formal financing are valid in Ghana. In other words, is there a demand-side constraint to the credit access problem? The study interviewed 131 owners of small businesses and concluded that small firms prefer formal financing and that the credit access problem is primarily a supply-side constraint.

In summary, the small business finance literature has investigated access to small business finance problems from various aspects, such as examining firm characteristics, lender decision-making models, and credit eligibility criteria. The findings indicating that credit access is a supply-side constraint highlight the need to further examine lenders' decision-making processes.

4.2.2 The Role of Due Diligence in Firm Financing

Transactions and deals that involved issuing securities led to the emergence of due diligence in the 1930s. Due diligence activities enabled the parties involved in the transaction to reveal hidden risks, providing an accurate picture of the firm’s position in the market. Tissen & Šneidere 2011 state that due diligence involves thoroughly investigating the firm’s operation, financial status, and legal obligations. The authors note that the investigation goes beyond merely screening internal documents and external sources to determine risk areas within the firm. During a merger or acquisition of a company, proper due diligence helps the acquirer with an accurate valuation of the firm. It validates or refutes the statements of facts about the business (warranties) captured in the agreement. Additionally, it helps the financier gain a better understanding of the market potential, growth opportunity, degree of competition, and operational capabilities of the firm (Delta Publishing Company, 2009). Due diligence is performed by private equity investors when investing in a firm, by banks when screening loan applications, or by parties in a joint venture agreement to verify partner capabilities (Howson, 2017).

Financial due diligence is seen as the area where most effort is focused during a firm’s due diligence process (Tissen & Šneidere, 2011). Commercial due diligence enhances both financial and legal due diligence because it crosschecks market potential with industry experts and examines the competitive landscape to make informed decisions about future profits (Howson, 2017). Legal due diligence exposes the firm's liabilities and is typically performed by legal experts due to its specialized nature (Bruner, 2004).

Given the complexity of business transactions, due diligence has broadened to encompass various areas such as market, taxation, environment, sales, information and technology, insurance, organization and human resources, operations, organizational culture, assets, and property (Bruner, 2004; Tissen & Šneidere, 2011). Financial institutions perform operational due diligence to understand the business's day-to-day operations and how the organizational structure supports the firm's operational objectives. This process aids lenders in identifying operational risks and opportunities (Morrison et al., 2008). The personnel within any firm are crucial for executing its operations. That is why obtaining a clear understanding of the talent and leadership capabilities through comprehensive human resource due diligence enables the investors or acquirers to assess the firm's capabilities. Furthermore, it reveals the adequacy of the firm’s human resource policies and sheds light on specific aspects of its culture (Delta Publishing Company, 2009).

Failing to execute due diligence correctly could lead to dire consequences (Wexler & Connor, 2007). The authors suggest that most transactions fail when due diligence efforts are not prioritized and are done wrongly. The authors note that too much effort is placed on implementing financial due diligence, and not enough effort is given to elements that cannot be derived from financial statements. Equally important are operational questions such as: what is the current strategy for growth? Does the firm culture sustain growth? Does the management team have the capabilities to drive the next phase of the business? Understanding these key issues is just as important as comprehending the firm's financials. The urgency to close a deal also explains why efforts in other due diligence areas are sometimes minimal. Effective due diligence requires time to investigate and process the findings. One study found a positive association between an additional four weeks of due diligence and an increase in 3-year return on assets (D. Cumming & Zambelli, 2017). Other recommendations to avoid failure include using external sources to validate internally sourced information, engaging experts to question all assumptions, and complementing hard information with soft information during the process (Benoliel, 2015).

The due diligence process typically involves analyzing both hard and soft information (Benoliel, 2015). The intangible nature of soft information adds complexity to the process, especially during the operational due diligence phase. Porsgaard et al. (2018) identify six drivers that influence decision-making in operational due diligence: people and organization, information technology, costs and assets, scalability, potential, and risk.

In the context of small business finance, financial institutions verify and evaluate loan applications before making a credit decision (D. J. Cumming et al., 2019; Umuerri et al., 2024). Due to the opaque nature of small and medium-sized firms, lenders face significant challenges in accessing the relevant information needed to make informed decisions (Malesu & Syrovátka, 2024). Because of these information asymmetrical problems and differences in knowledge levels between lenders and borrowers, most financial institutions perceive loan applications from small firms as quite risky. Consequently, lenders incur transactional costs in collating and processing loan application information (Aryeetey, 1986).

To reduce the risk of loan default, financial institutions conduct site visits, perform background checks on the owner, employees, and investors, cross-check the information presented in the loan application, and monitor bank accounts (D. J. Cumming et al., 2019). Due diligence goes beyond interrogating the hard information provided by the potential borrower. It also involves examining the intangible assets that add value to the firm. For example, what is the quality of the firm's resources? To what degree are customers loyal to the firm? How competitive is the firm? (Harvey & Lusch, 1995).

In summary, due diligence is a risk reduction strategy employed by firms or financial institutions to evaluate the quality of a transaction. It is an important phase in the loan application process. Due diligence goes beyond cross-checking and verifying hard information such as financial statements. It also includes other soft activities that are subjective in nature. Understanding its scope and nature in the loan application process will enhance transparency in credit decision-making.

4.2.3 Hard and Soft Signaling in Small Business Finance

Information asymmetry exists due to knowledge gaps between two or more parties (Abdelhafid & Mohammed, 2019). Under such conditions, the information-advantaged party possesses information whose full observability is privy only to the sender. Consequently, the receiver must bridge these information gaps and look for signals that inform their decision-making process. Spence 1973, a proponent of signaling theory, highlighted the importance of signals in conveying quality. The author`s research indicates that certain attributes signal characteristics that are otherwise unobservable. Rather than concentrating on the attribute itself, the author underscores the use of the attribute as a means to convey imperceptible or hidden qualities. For instance, the hiring process often relies on the potential employee's academic achievement and professional experience. Based on these attributes, the hiring manager aims to assess the job applicant's productivity. However, the author contends that assessing the job applicant's productivity is challenging, and academic achievement and professional experience do not necessarily translate to productivity. These attributes merely act as conduits to signal the applicant's qualities.

Signals can be categorized as hard and soft signals, serving as information carriers between the signaler or signal sender and the signal receiver (Kok et al., 2020). Hard signals are typically measurable pieces of information that are easily accessible, while soft signals are subjective and difficult to measure objectively. For instance, test scores represent hard signals, whereas personal recommendations illustrate soft signals. Common examples of signalers or signal senders in small business finance research are small firms, owners/managers, and entrepreneurs, while signal receivers are investors and lenders. Signalers possess an information advantage over receivers because they are privy to inside information and know the deal's quality. For example, if the signaler holds negative information, the signaler might withhold the information from the receiver and send a positive signal to the receiver. To determine the quality of the signal, the receiver must be able to fully access it.

As a carrier of information, signals can convey the intentions of the signal sender to the signal receiver and provide insight into the quality of a subject (Zhou et al., 2020). Huang and Knight (2017) qualify signals as informational and interpersonal. For example, in the context of small business lending, borrowers could use informational signals like degrees or certificates to communicate experience. Conversely, lenders can look for interpersonal signals by observing borrowers' behavior and attitude throughout the loan application process.

In summary, signal theory can be used to gain insight into sender and receiver signals and bridge information gaps between both parties. Small business finance studies can utilize this framework to understand the loan application process and credit decision-making.

4.2.4 The Resource-Based View of the Firm and its Application in Small Business Finance

Firms frequently compete against one another for market share. Those who outperform their competitors can uniquely coordinate and efficiently utilize their resources to produce value that others cannot replicate (Barney, 1991; Makadok, 2001). In his 1991 paper, Jay Barney proposed that firms with a sustained competitive advantage demonstrate specific internal characteristics that facilitate this advantage. The author argues that if all firms possess the same resources, it would be impossible to establish a competitive edge that others cannot replicate. Furthermore, the author assets that a firm’s resources are not perfectly mobile; otherwise, it would be easy for firms to acquire resources. While there are similarities to transaction cost theory, the resource-based view distinguishes itself by focusing on resources rather than cost. If capital is regarded as a resource, the significance of the resource-based view becomes immediately apparent. The implication is that a firm that can internally acquire the technology necessary to acquire capital and efficiently use funds would have a competitive edge over other firms.

A popular discourse of the resource-based view is human resources' role in creating competitive advantage. Proponents of a resource-based view in human resource management argue that people play a key role in formulating competitive strategy (Capelli & Singh, 1992). Strategy formulation is influenced by available talent. At their discretion, highly skilled people are likely to identify opportunities and recombine resources to achieve a competitive advantage (MacDuffie, 1995; Wright et al., 1994). Establishing unique human resource management systems will enable highly skilled people to deploy routine codified solutions to problems and discretionary unique solutions as well (Boxall & Steeneveld, 1999). Another perspective of the resource-based view is the recognition that firms require a different set of skills and capabilities in a dynamic environment. This perspective is referred to as the dynamic capabilities view. Unlike the resource-based view, the dynamic capabilities view recognizes that the environment and market conditions are constantly changing, and to remain competitive, firms need to alter routines, combine resources differently, and develop new capabilities (Teece et al., 1997; Winter, 2003). In other words, the focus of dynamic capabilities shifts from resource selection to building capabilities. The implication for human resource management is that changing routines and building new capabilities necessitates different human resource management systems and practices (Wright et al., 2001).

In the context of small businesses, the resource-based view highlights how small firms manage resource constraints to remain competitive. Although small firms have less access to resources compared to large firms, they must still make similar strategic choices and decisions to stay competitive, such as combining organizational assets and resources to ensure that the value created is inimitable and positively impacts the firm's bottom line.

4.2.5 Management Quality and Small Business Lending

Small and large businesses play important roles in any economy (Sharma et al., 2024; Oduro, 2020; Abor & Quartey, 2010). They provide employment opportunities for the workforce and produce goods and services that facilitate trade and consumption. However, firms require financial and human capital to produce goods and services. Finance allows firms to establish, grow, and expand their operations (Fatoki & Odeyemi, 2010), while human capital enables firms to use their resources efficiently. Analyzing the relationship between human capital and firm efficiency often requires a clear understanding of the quality of the firm's management (Agarwal et al., 2011; Feng et al., 2009; Rahaman & Zaman, 2013).

In competitive markets, firms must strive for market share. Employees with unique skills can elevate the firm above its competitors. Firm employees with skills that are not easily replicable can provide distinctive value to business operations that competitors cannot readily imitate. (Liu & Ko, 2014). Consequently, it is not hard to imagine that behind the open competition between firms for market share is a battle for the right talents to maximize firm efficiency. Poor incentives or an unsuitable environment might push highly skilled managers to leave the firm adversely affecting its returns. Therefore, the ability to retain talent signals management quality (Liu & Ko, 2014) to external parties, such as lenders. Research has demonstrated a link between firm earnings and management's ability. For instance, a positive relationship exists between increasing managerial ability and earnings. (Francis et al., 2019). A system that identifies, cultivates, and transfers skills within the organization contributes to the firm's competitive advantage.

In many studies, management quality is most often referred to as management ability (Bui et al., 2018; De Franco et al., 2017; Demerjian et al., 2012; Feng et al., 2009; Francis et al., 2019) or management competence (Anoke et al., 2022; Carson & Gilmore, 2000; Ghoshal et al., 1999; M. D. Ismail et al., 2014). Despite the lack of consensus on the measures of management quality, various studies have produced significantly strong results. For example, Ratnawati et al. (2021) find that managerial ability significantly increases the performance of SME's. Bennedsen et al. (2007)examine the effect of the CEO's absence on the firm's profitability. They hypothesize that the departure of CEOs with high management ability should impact the firm's performance. The study found the death of a CEO negatively and significantly affects firm profitability. Rahaman and Zaman (2013) measure the impact of management quality on the cost of debt and find an inverse relationship between management quality and the cost of debt.

Another aspect of the management quality discussion is the observed differences between large and small firms. Compared to large firms, small firms face significant resource challenges and often lack the managerial ability to achieve the firm's objectives effectively. Due to capital constraints, small firms may be unable to offer competitive remuneration to highly skilled employees. This resource constraint might lead to a trade-off between quality and execution. That means small firms may be unable to build those systems that support the institutionalization of behaviors, knowledge, and skills in delivering performance. Since large firms are further in the maturity curve, they are more strategic than small firms and have access to patient capital to build systems. Notwithstanding the inherent challenges that small businesses face, the sector may affect manager competence. Small firms that engage in highly intensive knowledge sectors will likely have access to higher-skilled employees (Eskindarov et al., 2020). For example, small firms that routinely execute technology-focused customer service are more likely to have employees skilled in customer service delivery than those that execute customer service using non-technology or traditional approaches.

In summary, various studies have found that management quality plays a significant role in small business literature. Much attention has been directed towards understanding its influence on firm performance and growth. Although studies have examined its relationship with debt financing, there is still an opportunity to examine its role in the due diligence phase of the loan application process. From a financial institution's perspective, the quality of the firm's management has a "certifying effect" in identifying potential borrowers (Chemmanur & Paeglis, 2005). It signals the firm's capability and competence to execute as promised and respond to changes in the environment. For instance, the recent COVID-19 pandemic required Ghanaian small firms to be resilient and find new ways of responding to the changing environment. Therefore, communicating the ability to adapt to change and survive leadership transitions would be important to lenders. Recognizing the importance of these dimensions of management quality in the Ghanaian SME literature (Aidoo et al., 2021; Amoa-Gyarteng et al., 2023; Umuerri et al., 2024) , this study further discusses the importance of management qualities such as defending business information, adaptation to change and change in leadership and its influence on loan application quality.

4.2.6 Defending Business Information

Like CEOs of large firms, owner-managers of small firms must make resource allocation decisions. These decisions are key to driving profitability and sustaining competitiveness. Therefore, owner-managers need to have a strong understanding of how the firm creates and delivers value. An important decision made by owner-managers is capital allocation. Due to capital constraints, owner-managers must reallocate capital to where it can create the most value. Skills and knowledge necessary for making financial decisions are essential for efficient allocations. However, efficient allocation of capital also requires experience and knowledge of the business. Matemilola et. Al., 2018 writes that experienced CEOs are more likely to make effective financing decisions. Therefore, implying that financial literacy goes hand in hand with business experience.

Some empirical studies support the importance of financial literacy and manager experience. For example, Agyapong & Attram (2019) found a positive relationship between financially literate small-firm owner-managers and firm performance in Ghana. In another study, Escriba et al. (2009) found that experienced managers are more likely to engage in growth-seeking activities compared to inexperienced managers.

In the context of small business lending, it is not far-fetched to imagine that lenders want to be assured that the firm's financial resources are allocated efficiently and the managers understand the business operations. Therefore, it follows that owner-managers who can adequately defend the firm's financial and business information signal management competence to lenders (Lusardi & Mitchell, 2007)Based on the literature, we surmise that the ability to defend business information makes small firms more attractive to lenders. Therefore, we expect that signaling this ability should improve the loan officer’s perception of the quality of the loan application. To test this assumption, we formulate our first hypothesis.

Hypothesis H1: Signaling the ability to defend information about the business will improve the perception of a small firm’s loan application quality

4.2.7 Adaptation to Change

The business environment is constantly evolving. For firms to remain relevant and compete effectively, they must strategically position their operations to adapt to these changes. Firms that fail to adjust to the changing environment are likely to fail (Scott & Bruce, 1987). Adaptability can be considered as a series of adjustments firms make over time in response to market, environmental signals, and operational gaps (Schindehutte & Morris, 2001). These adjustments allow firms to gain cost efficiencies in transactions that are critical to the firm. For example, firms may take advantage of economic changes to enhance their control over the supply chain (Williamson, 1981). Such actions are typically bolstered by practices like regularly monitoring market activities, customers, and pricing, tracking internal resources to identify personnel gaps, and frequently providing training to address those gaps.

Scott & Bruce (1987) state that for firms to survive, they are likely to face the challenges of overtrading, expansion of customer base, increased competition from rivals, and pressure to change management style. Increased competition might put pressure on the business, compelling the owner/manager to seek new opportunities or develop a strategy to tackle the competitive challenges. Conversely, an aggressive response that focuses on boosting sales by expanding into new regions can heighten uncertainty. While entering new markets may broaden the customer base, it also pushes the owner/manager into unfamiliar territory. From a lender's perspective, borrowers under such adverse changes in operations must adapt to the changes and find ways to persevere.

Furthermore, natural disasters might also hinder business activities. To survive such disasters, firms need to leverage resilience qualities. Since disasters are often unforeseen, the firm's survival depends on how quickly it can recover. The firm must be dynamic in reorganizing its resources and structure to respond to the crisis. As a result, firms in dynamic environments are more likely to possess adaptive capabilities (Woo et al., 1990). The resilience of a firm to survive requires an ability to unlearn, acquire new knowledge, and build structures that foster an adaptive culture (Schindehutte & Morris, 2001).

According to the literature, to remain competitive, firms need to build new capabilities and adapt to the changing environment (Teece et al., 1997; Winter, 2003). As a result, lenders are likely to be partial to small firms that demonstrate adaptive capabilities. Therefore, we expect that signaling the ability to adapt to changes should improve the loan officer's perception of the quality of the loan application. To test this assumption, we formulate our second hypothesis.

Hypothesis H2: Signaling the ability to adapt to change will improve the perception of a small firm's loan application quality.

4.2.8 Change in Leadership

Leadership is a key determinant of firm performance (Choudhary et al., 2013; Madanchian & Taherdoost, 2017). When firms are effectively led, improvements in performance can be observed not only in profits but also in employee engagement. Satisfied employees contribute to the smooth coordination of firm activities, which can lead to better product and service delivery. Effective leaders assume various roles to solve organizational problems. At times, these leaders spark creativity and motivate teams within the organization. At other times, they focus on achieving goals and anticipating trends (Tareque & Islam, 2023).

Leadership in small firms is characterized by owner-managers (Clifford et al., 1991; Gélinas & Bigras, 2004), meaning there is often no clear distinction between leadership and management. Maintaining stability within the firm requires a certain degree of continuity in leadership. An aging owner/manager, retirement, or unexpected events could create a need for a leadership change. (Bruce & Picard, 2006b). Considering the importance of leadership in the firm, it stands to reason that a change in leadership poses risks if not adequately planned. Unlike large firms, most small firms do not implement formal human resource management practices (Rozsa et al., 2021). Therefore, they are unlikely to establish a plan for leadership transition. Change in leadership is often facilitated through knowledge transfer between the outgoing and incoming leaders (Clifford et al., 1991).

Considering the literature on the impact of change in leadership, it follows that Ghanaian lenders are concerned if knowledge transfer between old and new management/leadership is poorly executed, new leadership may not have the necessary information to guide the firm effectively. For example, knowledge of prior repayment agreements and financial risk measures that were not adequately transferred may put the firm at risk of default in loan repayments. Alfred and Wen (2013) recommend that Ghanaian small firms should reassure lenders by clearly articulating succession plans in business plans. Based on the above discussion, we expect that minimizing leadership change risk should improve the loan officer’s perception of the quality of the loan application. To test this assumption, we formulate our third hypothesis.

Hypothesis H3: Signaling reduced change in leadership risk will improve the perception of a small firm’s loan application quality.

4.2.9 Signaling Financial Information Quality in Small Business Lending.

Financial records and information assist lenders in understanding the state of a business. By analyzing financial records such as financial statements, the lender can discern non-viable loan customers from viable ones and, to some extent, evaluate the firm's risk profile (O. Fatoki, 2014; Zeneli & Zaho, 2014). The lender's ability to separate viable loan applications from non-viable loan applications largely stems from reviewing the accounting information, including transaction data, journal entries, and summarized financial reports (Palazuelos et al., 2018). Based on this assessment, the firm may be asked to provide additional documentation to support the loan application.

Large firms communicate their financial records to lenders more effectively than small firms do. Effective communication significantly reduces the information asymmetry problems of lenders. In fact, research has shown that the probability of a loan application being successful increases with the quality of information provided (Van Caneghem & Van Campenhout, 2012). The authors find that a firm's use of external funds is significantly influenced by the quality of information. The quality of a financial statement can be assessed by determining whether it is audited and if the auditor's opinion is unqualified (Van Caneghem & Van Campenhout, 2012). An audited financial statement implies that an independent party has examined the firm's records and expressed its opinion on the financial statements. Audited financial statements may also signal the firm's willingness to be transparent.

Another important dimension of financial information quality is its level of accuracy and completeness. (Thi Thu Cuc NGUYEN & My Hanh HO, 2021; Umuerri et al., 2024). For instance, suppose a potential lender reviews the firm's payroll journal entry and discovers that some payroll entries are missing. Incomplete payroll entries suggest issues in the firm's bookkeeping and signal the quality of the firm's bookkeeping. Suppose all payroll entries were recorded, but the lender discovers inconsistencies in the entries, probably due to inaccurate entries. Consistency and accuracy in the entries will likely send negative signals to the lender. This reasoning also applies to cases where there is a mismatch or discrepancy between the loan amount requested by the borrower and the amount calculated by the lender. Based on the above discussion, we expect that improving financial information quality should improve the loan officer's perception of the quality of the loan application. To test this assumption, we formulate our fourth and fifth hypotheses.

Hypothesis H4: Signaling financial record's accuracy and completeness will improve the perception of a small firm's loan application quality

Hypothesis H5: Signaling consistency in amount requested and amount needed as verified by the lender will improve the perception of a small firm's loan application quality.

Figure 4-1. Conceptual Model and Hypotheses

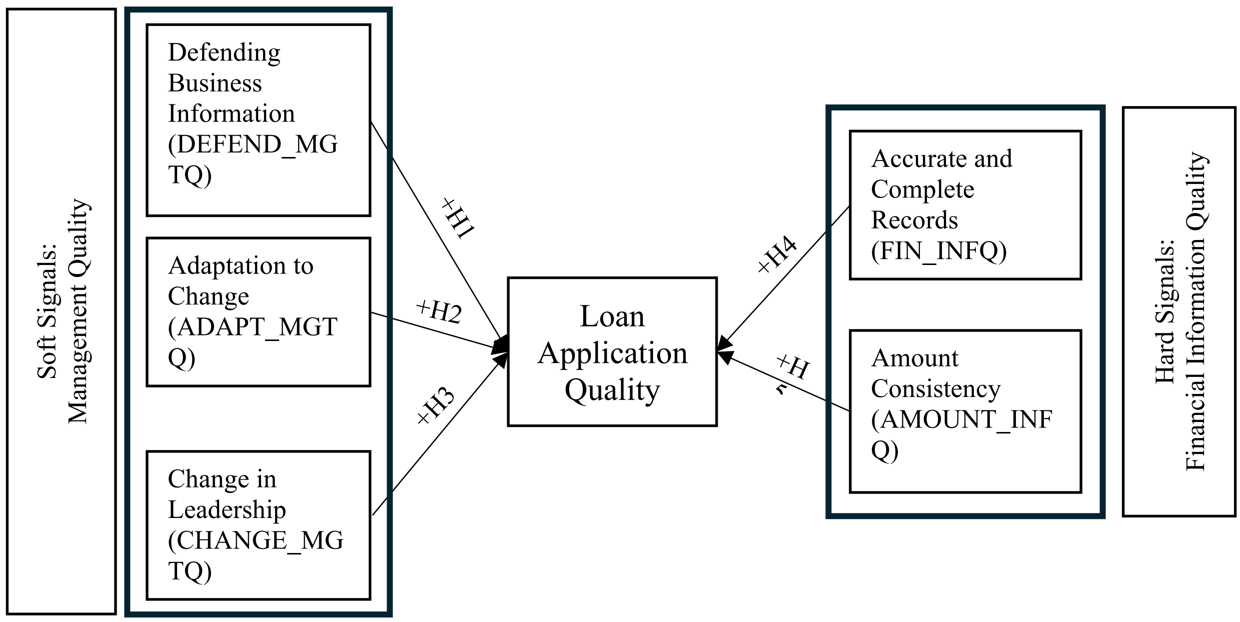

Figure 4-1 shows the conceptual framework of the study. The framework shows a diagram classifying the signals into soft management signals (left-hand side) and hard financial information signals (right-hand side). The independent management quality soft signals are defending business information, adaptation to change, and change in leadership. The independent financial information quality hard signals are accurate and complete records and amount consistency. Loan application quality is the dependent variable that the different independent variables seek to explain.

4.3 Data and Methodology

4.3.1 Data source

The population of this study comprised loans and credit officers from financial institutions in Ghana. The survey sample size included 193 loans and credit officers selected from six cities covering five main regions in Ghana. The interviews were conducted in the following regions and cities - Western region (Takoradi), Central (Cape Coast), Ashanti (Kumasi), Greater Accra

(Accra and Tema), Northern (Tamale) Greater Accra region of Ghana. This area was chosen due to the high concentration of banks in Ghana. Purposive sampling, a non-probability sampling technique, was used to select the respondents. Purposive sampling was chosen because it allows the selection of participants with specific credit and loan evaluation knowledge, experience, and expertise. The purposive sampling procedure involved the following steps: First, we defined the respondents as loan and credit officers in a financial institution in Ghana. Second, we defined the list of financial institutions in Ghana eligible for the study. The financial institutions included savings and loan companies, community banks, rural banks, commercial banks, commercial banks, investment banks, development banks, private banks, and merchant banks. Third, we directly approached and recruited bank officers through face-to-face meetings to conduct the surveys.

Data collection required recruiting experienced field staff. The enumerators underwent training on the study's objectives, the contents of the instruments, strategies for approaching respondents, data collection techniques, data capturing, ethics in research, and role-plays. Following this, the research instrument was tested, and subsequently, it was revised.

4.3.2 Description of variables

The study's dependent variable (see Table 4-1.), "loan application quality," is a Likert scale measuring the respondent's response to the question, "Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application?" The following variables serve as the control variables used during the regression analysis. The responses to the age of the firm were captured as follows: less than 2 years (value 0), 2 to 5 years (value 1), 6 to 10 years (value 2), 10 years + (value 3), gender of owner of the firm are recorded as female (value 0) and male (value 1), firm registration status is recorded as unregistered (value 0), registered (value 1).

The study's independent variables are described as soft and hard signals. Three variables are used to represent soft signals while two variables are used to represent hard signals. The soft signal variables are captured as follows: Referring only to your most recent due diligence task, on a scale of 1 to 10, how would you rate the quality of the loan application using the following questions, 1) How well can the borrower defend information about the business? 2) How quickly can the business adapt to change? 3) How prepared is the business for a change in leadership?

Table 4-1. Variable Definition

Variable	Definition
Dependent variable	
LOAN_QUAL	Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application
Independent variable	
Soft-signal variable	
DEFEND_MGTQ	Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application? How well can the borrower defend information about the business?
ADAPT_MGTQ	Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application? How quickly can the business adapt to change?
CHANGE_MGTQ	Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application? How prepared is the business for a change in leadership?
Hard-signal variable	
FIN_INFQ	Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application? Was the firm's records accurate and complete?
AMOUNT_INFQ	Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application? Did the amount requested match the amount needed to finance the business?

The hard signals are captured as follows: Referring only to your most recent due diligence task, on a scale of 1 to 10, how would you rate the quality of the loan application using the following questions: 1) Was the firm's records accurate? 2) Was the firm's records complete?

Using a regression model, we estimate three models to test the hypotheses. The models contain firm characteristics variables mentioned in the literature, soft signal variables (Model 1), and hard signal variables (Model 2). Model 3 includes firm characteristics variables and a mix of soft (three soft signal variables) and hard signal variables (two hard signal variables).

Table 4-2. Correlation Matrix

Descriptives/Correlations											
	N	Mean	1	2	3	4	5	6	7	8	9
LOAN_QUAL	193		1								
FIRM_AGE	193		0.072	1							
REG_STATUS	192		.189**	0.128	1						
GENDER	193		0.064	0.080	0.068	1					
CHANGE_MGTQ	193		.618**	0.139	0.091	0.074	1				
DEFEND_MGTQ	193		.644**	.143*	.220**	.152*	.603**	1			
ADAPT_MGTQ	193		.647**	0.117	.201**	.168*	.664**	.569**	1		
FIN_INFQ	193		.405**	.230**	.339**	.150*	.200**	.380**	.324**	1	
AMOUNT_INFQ	193		.176*	.184*	.181*	.158*	-0.030	.178*	0.104	.424**	1

4.4 Results

Tables 4-2 and 4-3 report the correlation results and three linear regression models. The first model analyzed the impact of firm characteristics on loan officers' ratings of the quality of a firm’s loan application. Although the control variables appear to have a positive relationship with the loan officers' ratings of a firm’s loan application quality, none of the control variables are statistically significant.

The regression result of Model 1 supports hypothesis H1 and shows that the coefficient of DEFEND_MGTQ is positive and significant at 1 percent ($p < 0.01$). That means, during loan application due diligence, firms that signal that they can defend information supplied in the loan application will significantly increase the rating of the firm’s loan application quality by loan officers. Model 1 supports hypothesis H2 and shows that ADAPT_MGTQ is positive and significant at 1 percent ($p < 0.01$). That means, during loan application due diligence, firms that signal the ability to adapt to change significantly increase the rating of the firm’s loan application quality by loan officers. Model 1 also supports hypothesis H3 and shows that the coefficient CHANGE_MGTQ is positive and significant at 1 percent ($p < 0.01$). That means, during loan application due diligence, firms that signal preparedness for a change in leadership significantly increase the rating of the firm’s loan application quality by loan officers. The regression result of Model 2 supports hypothesis H4 and shows that the coefficient of FIN_INFQ is positive and significant at 1 percent ($p < 0.01$). That means, during loan application due diligence, accuracy and completeness of the firm's records significantly and positively increase the loan officer's rating of the firm's loan application quality. However, Model 2 rejects hypothesis H5. The result is not significant for the variable AMOUNT_INFQ. That means discrepancies or differences in the amount requested and the actual amount needed do not significantly influence the loan officers' rating of the firm's loan application quality.

Table 4-3. Regression Results

	Model 1	Model 2	Model 3
	MGTQ	INFQ	MGTQ+INFQ
	Coeff	Coeff	Coeff
FIRM_AGE	-0.042	-0.019	-0.076
REG_STATUS	0.039	0.059	-0.004
GENDER	-0.054	0.015	-0.070
DEFEND_MGTQ	0.343***		0.286***
CHANGE_MGTQ	0.204***		0.241***
ADAPT_MGTQ	0.321***		0.287***
FIN_INFQ		0.390***	0.160***
AMOUNT_INFQ		-0.004	0.060
R Square	0.552	0.168	0.580
Adj. R Square	0.538	0.146	0.561

*p < 0.10; ** p < 0.05; *** p < 0.01

Model 3 adds the variables DEFEND_MGTQ, CHANGE_MGTQ, ADAPT_MGTQ, FIN_INFQ, and AMOUNT_INFQ to Model 3. The results are similar to Models 1 and 2. All management quality variables remain positive and significant at 1 percent ($p < 0.01$). FIN_INFQ also remains positive and significant at 1 percent ($p < 0.01$). The variable AMOUNT_INFQ remains not significant in Model 3.

4.5 Discussions & recommendations

Information asymmetry complicates lenders' decision-making processes and makes qualifying borrowers difficult (Calabrese et al., 2022). However, lenders use due diligence along with various hard and soft signals to identify quality loan applications (D. J. Cumming et al., 2019; Umuerri et al., 2024). To make credit decision-making more transparent, our study examines the effect of management and financial information quality signals on loan officers' perception of a small business loan application quality during the due diligence phase. The study identifies three theoretical and practical implications. First, it provides important insights into the interplay between soft signals, hard signals, and the perceived quality of loan applications by contributing to the application of theoretical frameworks of resource-based view (RBV) (Barney, 1991) and signaling theory (Spence, 1973) in small business lending. The results reveal that soft signals, represented by *the ability to manage change in leadership, the ability to defend information about the business, and the ability to adapt to change,* play an important role in determining the quality of a loan application. These managerial attributes underscore the importance of intangible managerial capabilities as key resources, aligning with the resource-based view assertion that unique and dynamic resources form the foundation of competitive advantage (Makadok, 2001).

Second, this study produces similar results to (Cornée, 2019; Grunert et al., 2005b) highlighting the complementary nature of hard and soft signals. This finding is particularly significant as it demonstrates that a comprehensive signal combining managerial and financial signals provides a more robust indication of the quality of small loan applications in Ghana than considering soft or hard signals in isolation.

Third, similar to (Cornée, 2019) our results show that not all soft signals are equally good at predicting the quality of a loan application. Some soft signals are more useful than others. Management soft signals, such as the ability to defend business information, are a stronger indicator of loan application quality in Ghana than preparedness for change in leadership. However, our results differ a bit from (Cornée, 2019) because our study also finds some soft signals that complement others. For example, the ability to defend business information is strong and similar to adaptation to change signals, indicating that both signals complement each other effectively. One potential explanation for these results is that small firms often operate in environments with high uncertainty, and owners/managers who understand the business and can quickly adjust their strategies in response to unforeseen challenges are more likely to survive and succeed.

From a practical standpoint, the results suggest actionable strategies for both borrowers and lenders in Ghana. First, small firms in Ghana seeking external financing should prioritize the development of leadership competencies that enhance their perceived adaptability and strategic flexibility. Second, on the financial side, small firms must maintain rigorous financial practices, ensuring that records are not only accurate but also transparent, accessible, and complete during the due diligence process. Third, for lenders, these findings suggest the value of a balanced assessment framework that equally considers qualitative managerial attributes and quantitative financial metrics. By doing so, lenders can make more informed decisions, reducing the risk of misjudging a borrower's potential.

Our study is not without its limitations. Unlike this study's non-randomized sampling approach, future research could extend this analysis by reducing selection bias by deploying randomized sampling so that the findings may apply to a broader population. To overcome generalization issues, future research could examine other countries and check for comparability of results.

Additionally, future research could explore how contextual factors, such as industry dynamics or economic conditions, moderate the relationships identified in this study. Industry dynamics might affect the weight lenders place on the various signals, and it is likely that during economic stability, lenders might rely heavily on hard signals, while soft signals might become more pronounced during the economic downturn.

Finally, future research could expand the management and financial information quality variables by introducing more variables to the model and a different approach to measuring management quality variables. In the current approach, the ratings might be inconsistent due to differences in perception or judgment. An objective approach to measuring management quality variables would contribute significantly to a better understanding of the relationship between management quality and loan application quality.

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Appendix C: Questionnaire

SURVEY ON LOAN APPLICATION DUE DILIGENCE IN FINANCING SMALL FIRMS IN GHANA

The following universities - Hochschule Bonn-Rhein-Sieg, University of Applied Sciences, University of Cape Coast and Constructor University Bremen (Previously, Jacobs University Bremen) are collaborating on a research project entitled "**Building Expertise and Training for Growth in the Consumer Goods and Food Processing Industry in Ghana (BET Ghana**)." As part of the project, there is the need to undertake a quantitative survey to understand the SME loan application due diligence in financial institutions. The survey targets loan officers in financial institutions. The results from the research would better inform the efforts of both management and policy interventions and strategies to help streamline and improve the activities of businesses in the sector. You have been selected for the study. Hence, your views are very much important to the study. Every information you provide would remain highly confidential. Thanks for accepting to participate in the study.

1. Contact Information and Socio-demographic Characteristics of Respondents				
		Tick (√)		Tick (√)
Respondent ID			**Education level**	
			No formal education	1
			Basic education	2
			Secondary education	3
Gender	Male	1	Tertiary education	4
	Female	2	Professional education	5
General	Yes	1	Others	6
	No	2	Others, please specify	

General Work experience			**Due Diligence work experience**	Tick (√)
	Less than 1 year	1	Less than 1 year	1
	1 – 2 years	2	1 – 2 years	2
	3 – 4 years	3	3 – 4 years	3
	5 – 10 years	4	5 – 10 years	4
	More than 10 years	5	More than 10 years	5
Tel: Fixed line				
Cell number				
E-mail:				
Digital address if available				

In which of the following financial institution are you employed	Tick (√)
Savings and loans companies	1
Community bank	2
Rural bank	3
Commercial bank	4
Investment bank	5
Development Bank	6
Private bank	7

Merchant Bank	8
Other: Please state the financial institution	

2. Firm Characteristics					
Referring only to your most recent completed loan application due diligence, **please provide the firms characteristics**					
2a. Age of firm	Tick (√)	**2b. Registration Status**	Tick (√)	**2c. Corporate Status**	Tick (√)
≤ 2 yrs	1	Registered	1	Sole Proprietorship	1
2-5 yrs	2	Unregistered	2	Partnership	2
6-10 yrs	3			Limited Liability	3
10+ yrs	4			Corporative Society	4
				State Enterprise	5

2d. Total Assets (Write GHS equivalent)	Tick (√)	**2e**. Number of Employees	Tick (√)
≤ $10,000	1	1 – 5	1
$10,001-$100,000	2	6 – 29	2
$100,001-$1,000,000	3	30 – 99	3
		100+	4

2f. Gender of the owner	Tick (√)	**2g. Education level**	Tick (√)
Male	1	No formal education	1
Female	2	Basic education	2
		Secondary education	3
		Tertiary education	4
		Professional education	5
		Others	6
		Others, please specify	
2h. Bank history	Tick (√)	**2i. Location of business**	Tick (√)
No bank account	1	≤ 10 minutes by car	1
Bank account with your bank	2	11 – 20 minutes by car	2
Bank account with another bank	3	21 – 30 minutes by car	3
		31 – 40 minutes by car	4
		41 – 50 minutes by car	5
		51 – 60 minutes by car	6
		> 60 minutes by car	7

2. Firm characteristics			
2j. How often has the loan applicant applied for a loan to your institution in the last 4 years?	Tick (√)	**2k.** How many of the loan applicant's application were successful?	Tick (√)
None	1	None	1
Once	2	One	2
Twice	3	Two	3
Three times	4	Three times	4
More than three times	5	More than three times	5

Loan Characteristics			
Referring only to your most recent completed loan application due diligence, please provide the loan application characteristics			
3a. Size of loan (Write GHS equivalent)	Tick (√)	**3b**. Type of loan	Tick (√)
≤ $1,000	1	Startup capital	1
$1,001-$10,000	2	Expansion capital	2
$10,001-$50,000	3	Capital expenditure	3
>$50,001	4	Working capital	4
		Others	

<table>
<tr><td colspan="4">4. Collateral Characteristics</td></tr>
<tr><td>4a. Referring only to the most recent completed loan application due diligence, what type of collateral was required?
(multiple response possible)</td><td>Tick (√)</td><td>4b. Referring only to the most recent completed loan application due diligence, what was the approximate value of the collateral required?</td><td>Amount
(GHS)</td></tr>
<tr><td>Land, buildings under ownership of the establishment</td><td>1</td><td>Value of collateral (write amount)</td><td></td></tr>
<tr><td>Machinery and equipment including movables</td><td>2</td><td colspan="2" rowspan="4"></td></tr>
<tr><td>Accounts receivable and inventories</td><td>3</td></tr>
<tr><td>Personal assets of owner (house, etc.)</td><td>4</td></tr>
<tr><td>Other forms of collateral not included in the categories above</td><td>5</td></tr>
<tr><td colspan="2">4c. Referring only to the most recent completed loan application due diligence, what was the legal status of the collateral</td><td colspan="2">Tick (√)</td></tr>
<tr><td colspan="2">Unregistered</td><td colspan="2">1</td></tr>
<tr><td colspan="2">Registered</td><td colspan="2">2</td></tr>
</table>

Due Diligence	
5a. Due Diligence Process: After a loan application has been received, what is the average number of weeks to complete a loan application due diligence	Tick (√)
Less than 1 week	1
1 – 2 Weeks	2
2 – 4 Weeks	3
4 – 6 Weeks	4
6 – 8 weeks	5
More than 8 weeks	6

5b. On an average, how many loan application due diligence do you complete in a month?	Tick (√)	**5c.** Referring only to your last completed due diligence task, how many weeks above the average did you spend on the task?	Tick (√)
1	1	1 week	1
2 - 4	2	2 – 4 Weeks	2
5 - 7	3	5 – 7 Weeks	3
More than 7	4	8 – 10 Weeks	4

5d. Referring only to your most recent completed due diligence task, using a scale of 1-10, how would you rate the quality of the loan application.	Scale chosen
5e. Referring only to your most recent due diligence task, using a scale of 1-10, how would you rate the quality of the loan application using the following questions below	Scale chosen
The degree of the business dependence on the owner/manager	
How prepared is the business for a change in leadership?	
How well can the borrower present about the business?	
How well can the borrower defend information about the business?	
How quick can the business adapt to change?	
When operating the business, does the owner/manager separate his/her personal bank account from the business bank account?	
Was the borrower dishonest when presenting information about the business?	
Was the borrower willing to disclose all necessary information about the business?	
`Was the firm's records accurate?	
`Was the firm's records complete?	
How regular did the firm operate its bank account?	
Was the borrower's collateral legally registered? (i.e., registered landed property)	
Did the amount requested match the amount needed to finance the business?	
Reputation of owner/manager in the community it operates	

Reputation of owner/manager with its business partners	
Reputation of business	

Chapter 5 : Conclusion

Small businesses play a crucial role in Ghana's economic development (Abor & Quartey, 2010b; Oduro, 2020). Despite their significance, these enterprises struggle to access the essential funds needed to survive and expand. The magnitude of the issue is underscored by a substantial $6 billion financing gap and a 90% loan application rejection rate in Ghana (Bigsten et al., 2003; Vicente, 2020). Researchers have sought to understand the problem by examining the factors influencing small business financing and the criteria necessary for debt financing. In particular, they find that access to financing for small businesses depends on various factors, such as the use of loans, repayment plans, and industry specifics (Agyapong et al., 2011; Antwi & Ohene-Yankyira, 2017). However, many small firms lack transparency, which makes it challenging for lenders to assess creditworthiness. A significant topic in the literature is bridging information gaps through the use of hard and soft information (Berger & Udell, 2006; Grunert et al., 2005b). To contribute to the discussion, this study identified two small business finance literature areas that needed a better understanding.

First, findings that suggest that combining soft and hard information is relevant in small business finance and lead to a logical question: Are there combinations of hard and soft information more relevant than other combinations? Second, most studies focus on the final decision event to approve or reject a loan while overlooking other phases of the credit decision process. What about the phases that precede the final decision? Such as the due diligence phase. What do we know about the due diligence phase? What role do the firm's management capability and financial knowledge play in lenders' decision-making process? Identifying these gaps in the literature, three research questions were formulated: 1) Compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate? 2) What signals do loan officers consider when performing a small business loan application due diligence? 3) What is the effect of management and financial information quality signals obtained during due diligence on the loan officer's perception of the loan application's quality?

The thesis used a three-phase approach to address these research questions. Phase 1 used a quantitative approach to collect data from 242 small firms in Ghana to address Research Question 1. In the next phase, it used a qualitative approach to collect primary data from 24 loan officers in Ghana to address Research Question 2. To address Research Question 3, it collected quantitative data from 193 loan officers in Ghana. To make sense of the results, the thesis used the following theories: 1) Information asymmetry theory, 2) Signal theory, and 3) Resource-Based View (RBV).

This chapter continues with a summary of the results from each chapter. Next, it outlines the theoretical implications of the studies conducted in this thesis. Following that, it discusses the practical and policy implications. Finally, it addresses the limitations of the studies and offers recommendations for future research.

5.1 Summary of the Results and Contributions of each chapter

Chapter 2: The relevance of how financial institutions combine hard and soft information in small business financing.

A quantitative analysis of Research Question 1 (Compared to a non-balanced combination of hard- and soft information, would a balanced combination increase small businesses' loan application success rate?) produced the following key results: 1) compared to other financial institutions, there is a negative influence on the success rate of loan applications sent to a financial institution whose lending technology is characterized by low hard information and high soft information, 2) compared to other financial institutions, there is no significant influence on the success rate of loan applications sent to a financial institution characterized as practicing high hard information and low soft information, and 3) compared to other financial institutions, there is an increase in the success rate of loan applications sent to a financial institution whose lending technology is characterized as a balanced combination of hard and soft information (medium soft, medium hard information).

Chapter 3: Loan Application Due Diligence and Financing Small Firms in Africa.

A qualitative analysis of Research Question 2 *(What signals do loan officers consider when performing a small business loan application due diligence?)* identified 11 key hard and soft signals that lenders in Ghana during the due diligence phase use to qualify loan applications, such as 1) derisking the business by ensuring that the business is not totally dependent on them, 2) sound knowledge of the business, operations and trends, 3) proper succession planning, 4) investing in capabilities to adapt to a changing environment, 5) separating private financial transactions from business transactions, 6) building a solid business and personal reputation, 7) active willingness to share information, 8) accurate and complete record-keeping, 9) operating business bank account regularly, 10) faulty budget and turnover assumptions, and 11) legitimacy of collateral.

Chapter 4: The Role of Signaling Management and Financial Information Quality in Small Business Lending in Ghana.

A quantitative analysis of Research Question 3 (What is the effect of management and financial information quality signals obtained during due diligence on the loan officer's perception of the loan application's quality?) produced interesting results that highlight the role of management quality soft signals and financial information quality hard signals during the due diligence process in small business lending. The following key results were produced: 1) during loan application due diligence, firms that signal that they can defend information supplied in the loan application will significantly increase the rating of the firm's loan application quality by loan officers. 2) during loan application due diligence, firms that signal the ability to adapt to change significantly increase the rating of the firm's loan application quality by loan officers. 3) during loan application due diligence, firms that signal preparedness for a change in leadership significantly increase the rating of the firm's loan application quality by loan officers. 4) during loan application due diligence, accuracy and completeness of the firm's records significantly and positively increase the loan officer's rating of the firm's loan application quality.

5.2 Summary of Theoretical Implications

Complementary role of hard and soft information or signals

This thesis confirms the results of other studies (Cornée, 2019; Grunert et al., 2005b) highlighting the complementary role of hard and soft information/signals. Consequently, the results of this thesis expand the literature on the complementary role of hard and soft information or signals in small business lending. The thesis findings suggest that lenders benefit from combining these two types of information for a comprehensive evaluation. In other words, the results obtained from considering soft or hard signals/information in isolation does not provide a robust indication of loan application quality. For instance, the results of the statistical analysis of the combined model of hard and soft signals produced the best results compared to the other models of soft or hard signals only.

Heterogeneity in Information mix

The heterogenous unique combinations of hard and soft information used in Chapter 2 of this thesis differ from the homogeneous models used in other studies (Grunert et al., 2005). The empirical model's inclusion of more combinations of hard and soft information reduces model the bias present in other researchers and captures the variation in the predictive capacity of the different mixed information models. This line of inquiry is important for small business lending literature because it allows for the assumption that small business lenders in Ghana do not use one type of combination of hard and soft information. Depending on the level of transparency of the small firm, various combinations are available, and lenders in Ghana find the best fit for screening a loan application.

Weighting of alternative credit scoring models

The various combinations of hard and soft information used in this study have implications for the literature on alternative credit scoring. Traditionally, credit scores are algorithms based on hard financial data to evaluate credit card risks (Njuguna & Sowon, 2021). However, with technological advancement, credit scoring models have evolved beyond traditional financial services, integrating alternative sources. The findings of this study, which highlight the positive effect of a balanced combination of hard and soft information, suggest small business credit scoring models should not be overly dependent on hard information. Instead, alternative credit models should give equal weight to both soft and hard information in credit scoring. Achieving this balance may necessitate adaptability and flexibility to accommodate credit scoring frameworks that account for variations in institutional settings and borrower characteristics.

Importance of signals in lending decisions

This thesis highlights the importance of signal theory in financing firms (Epure & Guasch, 2020; Ko & McKelvie, 2018). It extends the small business literature by utilizing signal theory as a framework to understand credit decision-making. Furthermore, it emphasizes the dual role of signals. Signals can improve borrowers' preparedness and the lender's decision-making process. For example, small firms in Ghana can effectively communicate signals related to the quality of the firm's management and financial information, thereby increasing their chances of loan approval. Lenders can develop the necessary tools and knowledge base that interpret borrower signals

5.3 Summary of Practical and Policy Implications

Type of Institution matters

The significant increase in the loan application success rate of firms that applied to rural and community banks in Ghana suggests the type of institution from which small firms seek credit matters. Small firms in Ghana are likely better off applying to small-sized banks rather than small-sized Non-Bank Financial Institutions (NBFI). One possible reason for the difference in lending outcomes between these two types of institutions is that the lending technology or mixed information models used by rural and community banks in Ghana can evaluate the potential of small firms more effectively than savings and loan companies. Therefore, policymakers can expand the role of small-sized Non-Bank Financial Institutions by reforming their lending practices.

Contextual relevance of lending frameworks

Lending frameworks need to be tailored to local cultural and business contexts to address small firms' needs effectively. Standardized approaches may fail to capture the unique challenges of resource-constrained environments like Ghana. In other words, rather than using generic lending models (one-size-fits-all), banks and financial institutions can adopt lending technologies or information models that fit the realities of small businesses in a specific country. For example, rural and community banks leverage soft information extracted from innovative lending techniques, such as group lending, and combine it with hard information-based lending to effectively evaluate a loan application.

Role of Education and Training in Bridging Gaps between Lenders and Borrowers

The key findings regarding the quality of financial information indicate that borrowers should be mindful of how they communicate the firm's financial information to lenders. Financial literacy programs can help small business owners understand and address lender requirements. Policymakers can support financial literacy programs by implementing such programs for small firms in Ghana. From the lender's perspective, targeted training for loan officers can improve their ability to evaluate hard and soft signals, fostering consistency and fairness.

Promote Access to Finance through Financial Instruments

The results of this thesis suggest that loan approval success rates in Ghana are higher with rural and community banks. Policies that support small businesses during crisis, such as the recent COVID-19 pandemic, could target potential lenders such as rural and community banks and provide guarantee instruments that support small firm financing.

5.4 Summary of limitations and suggestions for future research

Sampling bias: Due to the cost implications and time constraints involved in collecting data from the entire population, researchers have suggested sampling or collecting data from a subset of the population (Henry, 1990). Furthermore, a representative sampling approach is often advised to ensure representativeness. However, the study used non-randomized sampling to collect data from loan officers to test the effect of management and financial information quality signals on loan application quality. The approach was adopted because it allowed the selection of participants who possess specific credit and loan evaluation knowledge, experience, and expertise. Future research could improve this approach and find ways to sample the population randomly.

Measurement bias: Other studies and loan officers surveyed in this thesis indicated adaptation to change, preparedness for change in leadership, and the ability of management to defend business information as management qualities considered during due diligence. However, management quality is a broad and complex concept. Future research could widen the set of measurable attributes by testing multiple indicators.

Contextual bias: This thesis identifies that the framework used might be specific to a particular context and might limit its applicability in other contexts. For example, the three unique combinations of hard and soft information (high, low, medium) are subjective categorizations that are not universally defined and thus could vary depending on the lending context or region. Future research could establish objective criteria for high, low, and medium levels of information and decompose the information models into distinct combinations of lending technologies. A similar observation is identified in Chapter 4 (signaling management and financial information quality signals in small business lending in Ghana). Future research could explore how contextual factors, such as industry dynamics, affect lenders' ratings of the various management and financial quality signals.

Extending the understanding of due diligence in access to finance: This thesis underscores the significance of due diligence in small business lending. The findings reveal which signals lenders deem important when assessing the quality of a loan application. To improve small business' access to financing, it is equally important to understand the factors that hinder small businesses from effectively preparing for the due diligence phase of the loan application process. Future research can extend this study by undertaking a similar survey to understand the due diligence dynamics and mechanisms that influence credit access from the borrower's perspective.

Bridging information asymmetry gap: Lenders bridge the gap by leveraging both hard and soft information in credit decision-making and performing due diligence. However, understanding the information types in credit decision-making might not provide a complete picture. Qualitative interviews with loan officers in Ghana indicate a reliance on intuition or gut feeling (as commonly expressed by the loan officers) when processing loan applications. This undoubtedly raises questions such as to what extent loan officers recognize the use of gut feeling. What factors influence its use? Does gut feeling play a moderating role in credit decision making. Future research could investigate how loan officers use gut feeling or intuition in Ghana and what factors influence its use.

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