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Analysis of factors influencing financial inclusion of coffee farmers in the littoral region of Cameroon.

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ANALYSIS OF FACTORS INFLUENCING FINANCIAL INCLUSION OF COFFEE FARMERS IN THE LITTORAL REGION OF CAMEROON

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the thesis itself.

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Signed..... 

Date…..28th March 2024.....

Approval

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ABSTRACT

The study delves into the determinants of financial inclusion among coffee farmers in the Littoral region of Cameroon, aiming to uncover factors influencing their engagement with the financial system. By analyzing individual farmer characteristics, farm farm business characteristics, and Microfinance Institutions (MFIs), the research seeks to elucidate their roles in fostering financial inclusion, including aspects like savings accounts and loan accessibility. Data collected from 300 respondents across rural areas will address knowledge gaps and provide insights into the relationship between financial inclusion and coffee farming. Utilizing Principal Component Analysis (PCA), an FI Index will be constructed to measure financial inclusion comprehensively. Correlation results reveal a significant and negative correlation between MFIs and Farm business characteristics (-0.391, $p < 0.01$), and no significant correlation between MFIs and Farmer Characteristics (0.083, $p = 0.493$), while Farm business characteristics demonstrate a moderate and significant positive correlation with Farmer Characteristics (0.319, $p < 0.01$). The findings suggest that Farm business characteristics and Farmer Characteristics positively influence financial inclusion, emphasizing the importance of fostering entrepreneurial skills among coffee farmers. The study proposes recommendations for policy and practice, including strengthening financial literacy programs, supporting entrepreneurship, improving access to financial services, enhancing collaboration, promoting policy reforms, and monitoring interventions. Further research avenues include longitudinal studies, comparative analyses, qualitative research, impact evaluations, policy analysis, and advocacy to deepen understanding and address limitations, ultimately contributing to inclusive development in the region.

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ABBREVIATIONS AND ACRONYMS

ANPCC	National Association of Cocoa and Coffee Producers
CICC	Interprofessional Cocoa and Coffee Council
CONAPROCAM	National Confederation of Cocoa and Coffee Producers of Cameroon
FODECC	Cocoa and Coffee Sector Development Fund
GDP	Gross Domestic Product
ICC	International Coffee Council
IRAD	Institute for Agricultural Research for Development
MFI	Micro Finance Institution
MENAP	Middle East, North Africa, Afghanistan and Pakistan
MINADER	Ministry of Agriculture and Rural Development
MINRESI	Ministry of Scientific Research and Innovation
NACOSTI	National Commission for the Science, Technology Innovation
NIS	National Institute of Statistics
PCA	Principal Component Analysis
PNVRA	National Programme for Agricultural Extension and Research
PPDMVCC/PSCC	Project Supporting the Production and Distribution of Cocoa-Coffee Plant Material/Seedling Project
PPVCC	Cocoa and Coffee Tree Protection Project
PRDFCC	The Coffee Sector Revitalization and Development Plan
SDMVCC	Selection and Distribution of Basic Enhanced Plant Material with Improved Cocoa and Coffee Plantation Productivity
SPSS	Statistical Package for the Social Sciences
SSA	Sub-Saharan Africa

DEFINITION OF TERMS

Financial Inclusion Financial inclusion according to the World Bank (2018) signifies the number of people or businesses having access to affordable, useful and ease, to financial services and products that meet their needs at any time and place regardless of where they are situated be it in terms of payments, credit (loans), transactions, savings and insurance, while being delivered in a sustainable and responsible way all together. Opening a bank account is always the first step to financial inclusion because it allows the account holder to borrow, save and also send and receive payments from other people (Dev, 2006). Financial inclusion is identified as a key enabler to boosting prosperity and reducing poverty in the society and world at large.

"Tontines" or "Njangi houses" These are groups of people bounded together by culture, language or village or similar activity that come together for the main purpose of pulling their financial resources together so as to give the opportunity to those in need of financial resources for their businesses, household, education of their children, or for emergency to borrow at a relatively cheaper rate without the need for a collateral security(Ojong, 2019).

Coffee activities: Some of them include but are not limited to the following; Planting coffee before the rainy season or in the spring, preparing the field by plowing it at least four or five times and harrowing to bring the soil to a fine tilth level, propagating coffee seeds either through seed germination or cutting, regular irrigation, contingent on the degree to which the region's climate has changed, prompt application of manures and fertilizers, forking and digging to keep weeds out, mulching coffee plants, pruning—that is, removing dead and unhealthy branches, the application of pesticides and insecticides for disease control, harvesting of coffee when the bean seeds mature and may involve picking the very ripe bean while allowing the others to fully mature; a process called fly picking, we have main harvest and then the cleaning harvest whereby the left over bean in the coffee farm is picked up to avoid waste, and then post-harvest activities that involves drying of the coffee bean, grading of the coffee based on their sizes after peeling it off, packing of the coffee bean and transportation of the coffee bean to the market to be delivered to the suppliers.

DEDICATION

I dedicate this research dissertation to God Almighty, whose infinite grace and guidance have been the source of strength and inspiration throughout this academic journey. To my loving parents. My dad; Djouda Jacques, and my mum; Juliana Ndie Ebai, whose unwavering belief in my abilities and constant encouragement have been the pillars of my success, I am forever grateful. To my supportive brothers; Osang Ntoh Lionel, Ayuk Ntoh Peter, and Tabi Ntoh Gaetan, thank you for always cheering me on and being there through thick and thin. To my beloved and one and only niece, Eben Ntoh Emi Miracle and to the loving and blessed memory of her mother, my only sister, whom I lost in the course of my Masters' studies at a critical time in the study; Bessem Ntoh Sandrine Ginnette, whose love and impact I still feel as days go by. Her departure was devasting to my emotional concentration during this program, but her love she left behind with me kept me strong in the programme, especially at the verge of giving up, I say thank you. I extend my deepest gratitude to all those who have supported me in various ways during this study, including my friends, mentors, and well-wishers. Your belief in my potential and your encouragement have been instrumental in reaching this milestone. This work is dedicated to each one of you, as a token of my heartfelt appreciation and as a testament to the power of love, encouragement, and collective support in achieving our dreams.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Sixty percent (60%) of the world's population relies on agriculture for their livelihood (Bjornlund, Bjornlund, Van Rooyen, 2020). According to (Fritz et al., 2019), 40% of the world's population live below the national poverty line and spend a third of their income on food. All coffee-growing economies now accept the enormous contribution that coffee makes to economic growth. The United Nations Conference on Trade and Development (UNCTAD, 2004) identified coffee as the agricultural product with the best potential for income generation. Coffee is a highly competitive and lucrative economic cash crop. The economic benefits of coffee help to preserve stable communities and significant rural jobs.

The core of Cameroon's economic activity is agriculture. Roughly 70% of the workforce is employed by it, and it contributes 25% of the GDP and 30% of export earnings (Food and Agriculture Organization, 2008). Endowed with a lot of arable land and consistent, heavy rainfall in most areas, Cameroon produces a wide range of agricultural products for both local and export markets. Approximately 55% of Cameroonian citizens are rural dwellers, with agriculture serving as their primary economic activity (Mahendra Dev, 2006; Shillie, Balgah, and Njonyi, 2023). The coffee industry in Cameroon employs at least 423,000 households, thereby creating close to 94.6% of jobs in the agricultural sector in Cameroon as opposed to other sectors. The entire process of coffee production from the cultivation to the commercialization and even transformation gets close to 2,961,000 of people being employed in Cameroon. The crop is widely farmed throughout the nation, with Arabica being more common in the Western Highlands and Robusta being more common along the coast (Sunderlin et al., 2000).

The government of Cameroon is actively working through various agricultural institutions to revive coffee production, but faces challenges as the number of coffee farmers continues to decline, with many transitioning to other cash crops like cocoa and food crops such as cassava, pepper, tomatoes, and maize. Efforts include the Cameroon Cocoa and Coffee Sector Revitalization and Development Plan (PRDFCC), aiming to increase production of Robusta and Arabica coffee by at least 125,000 and 35,000 tonnes respectively (Herve and Zhao, 2018). Initiatives like the "Selection and Distribution of Basic Enhanced Plant Material with Improved Cocoa and Coffee

Plantation Productivity" (SDMVCC) and projects overseen by the Ministry of Scientific Research and Innovation (MINRESI) support this goal. The Ministry of Agriculture and Rural Development (MINADER) leads projects like the "Protection against diseases and insects" and provides extension assistance through the National Programme for Agricultural Extension and Research (PNVRA). The State is addressing personnel shortages through recruitment drives, crucial for sustaining efforts initiated since the 1990s crisis.

The empirical literature surrounding the study in the Littoral region of Cameroon underscores the critical need for financial inclusion (FI) among coffee farmers, given its significance for sustainable development and poverty alleviation. With over 90% of coffee produced in poor nations like those in South America, including Brazil as the leading global producer, the challenges faced by coffee farmers, particularly in accessing finance, are pronounced (Krishnan, 2017). Financial inclusion, defined as access to and usage of affordable financial services, is pivotal for economic growth, poverty reduction, and equitable development (Allen et al., 2012; Demirgüç-Kunt et al., 2018). More than 90% of the 1.7 billion individuals worldwide do not have an account at a financial institution (Subbarao, 2009). The G20 concluded in 2010, points out that financial inclusion—that is, having access to and using reasonably priced financial services—promotes global development (Allen et al., 2016; Demirgüç-Kunt and Klapper, 2013; Zins and Weill, 2016); this is particularly true for those who are less fortunate, such as women, adults, and the impoverished. Financial inclusion promotes economic growth and helps to reduce poverty because people have the means to borrow and improve their living conditions ((Beck T, Demirguc-Kunt A, and Martinez Peria M., 2007) et al., 2007a; Bruhn and Love, 2014). Also, the low level of financial inclusion in Cameroon, with only 15% of adults having accounts at formal financial institutions, presents a pressing policy challenge (Triki and Faye, 2013).

The limited access to finance exacerbates the difficulties faced by coffee farmers in the Littoral region, necessitating a closer examination of formal sources like microfinance institutions (MFIs) as potential solutions to their financial needs (Singhe and Louche, 2020). Despite the existence of MFIs regulated by the Central African Banking Commission (COBAC), the prevalence of the discouraged borrower syndrome and the preference for informal sources among low-income individuals underscore the complexities of achieving financial inclusion in the region (Koomson I, Koomson P, and Abdul-Mumuni A, 2023). As public banks often exclusively serve public

employees, MFIs emerge as vital alternatives for individuals unable to access traditional banking services (Messomo Elle, 2017; Ofeh and Jeanne, 2017; Shu and Oney, 2014). A lot of finance is needed when it comes to coffee production since it involves different coffee activities (see definition of terms) that requires financing (Lemeilleur et al., 2020).

The financial landscape for coffee farmers in the Littoral region of Cameroon is shaped by a complex interplay of formal and informal financial sources (Mahendra Dev, 2006; and Tambi, 2023). Both financial sources present particular challenges and opportunities for accessing finance (Shu and Oney, 2014). While microfinance institutions (MFIs) offer a potential avenue for financing agricultural activities, their uneven distribution, predominantly in urban centers rather than rural areas where coffee farming occurs, limits their outreach and penetration into the communities most in need (Mkhaiber and Werner, 2021). Consequently, coffee farmers often resort to informal sources such as traditional rotating savings and credit associations ("tontines" or "njangi houses") to fulfill their financial needs promptly, albeit with limited loan amounts and without the bureaucratic hurdles associated with formal financial institutions (Ojong, 2019). Family and friends serve as crucial source of finance for coffee farmers, offering inexpensive funding but accompanied by hidden costs and challenges related to risk-sharing and limited liability, thereby highlighting the nuanced dynamics of informal financial arrangements within agricultural communities (Husodo Z, D.V, Danarsari D, and Salehudin L., 2013, Lee and Persson, 2016.) Amidst the backdrop of climate change's profound impact on coffee, particularly on Arabica coffee production, it is imperative to enhance financial inclusion among coffee farmers (Cole S., Sampson T,and Zia B, 2011). In the face of low formal financial access rates in Cameroon, there underscores the significance of understanding the determinants of financial inclusion and its implications for sustainable agricultural development in the region (Calzadilla et al., 2013, and Bianco, 2020).

Measuring financial inclusion (FI) has emerged as a critical factor in determining a nation's economic progress, leading to increased attention from global economic policymakers, academics, and decision-makers. However, despite this growing interest, there is still a lack of a reliable technique for accurately assess FI levels. Therefore, this study aims to analyze the factors that influence the financial inclusion of coffee farmers in the Littoral region.

1.2 **Statement of the Problem**

This study's motivation arises from the critical need to address the pervasive issue of financial exclusion among coffee farmers in the Littoral region of Cameroon. Despite the region's significant contribution to the national economy through coffee production, farmers face formidable challenges in accessing formal financial services, including credit, savings, and insurance. This limited access not only impedes their ability to invest in their farms and adopt sustainable agricultural practices but also leaves them vulnerable to economic shocks and external risks.

The existing literature on the determinants of financial inclusion highlights a range of factors that may influence individuals' access to formal financial services. For instance, Demirgüç-Kunt and Klapper (2018) underscore the importance of individual characteristics such as education level and gender in shaping financial inclusion outcomes, noting that females and the less educated are often less likely to have formal financial accounts. Shihadeh, (2018) further emphasizes the role of education in financial inclusion, showing that individuals with higher levels of education, particularly postsecondary education, are more likely to be financially included. Additionally, income levels play a significant role, with the poorest and most disadvantaged individuals facing greater challenges in accessing formal financial services, particularly in terms of borrowing opportunities(Kling et al., 2022). These findings suggest that multiple individual-level factors intersect to shape financial inclusion outcomes, and addressing these disparities is crucial for promoting greater financial inclusion.

However, despite the wealth of research on financial inclusion determinants, there remains a gap in understanding the specific challenges faced by coffee farmers in the Littoral region of Cameroon in accessing the finance from formal financial institution for their businesses. While studies have examined financial inclusion in various contexts, such as Bhattacharyay, (2016) who looked at urban areas and Kumar & Pradhan, (2024) who examined specific demographic groups, there is limited research focusing specifically on the financial inclusion of agricultural communities, particularly in regions with unique economic and geographic characteristics like the Littoral region of Cameroon. Furthermore, existing literature often provides mixed findings, with some studies highlighting the importance of individual characteristics of factors that influenced financial inclusion in the Middle East, North Africa, Afghanistan and Pakistan (MENAP), while others emphasize institutional factors or broader socio-economic contexts (Triki and Faye, 2013). These

inconsistencies may stem from variations in research methodologies, sample characteristics, or contextual factors across different studies, underscoring the need for context-specific investigations into financial inclusion determinants.

By addressing this research gap and leveraging a nuanced understanding of financial inclusion determinants, this study seeks to contribute to the literature on financial inclusion and inform targeted interventions aimed at promoting greater financial access and inclusion among coffee farmers in the Littoral region of Cameroon. The Global Findex report for Cameroon (country wide), establishes that only 15% of adults with an account at a formal financial institution, and only 4% of adults with at least one loan outstanding from a regulated financial institution. This statistic is very low when looking at other countries in Sub-Saharan Africa like Angola with 39% and 8% respectively, and Mauritius with 80% and 14% respectively. Therefore, this study aims to fill this gap by analyzing the factors contributing to the seemingly low financial inclusion of coffee farmers in the Littoral region, providing insights into which areas policymakers and stakeholders should focus on to improve financial inclusion outcomes in the region. The general objective is to analyze the factors influencing the financial inclusion among farmers in the Littoral region of Cameroon.

1.4 Research Objectives

1.4.1 General Objective

The general objective is to analyze the factors influencing the financial inclusion among farmers in the Littoral region of Cameroon.

1.4.2 Specific Objectives

The specific research questions are the following;

1. To examine the effect of farmer characteristics on financial inclusion of coffee farmers in the Littoral region.
2. To examine the effect of farm business characteristics on financial inclusion of coffee farmers in the Littoral region.
3. To examine the effect of microfinance institutions engagement on the financial inclusion of coffee farmers in the Littoral region of Cameroon.

1.5 Research Questions

The study shall seek to address the following questions:

1. How does farmer characteristics, influence the financial inclusion of coffee farmers in the Littoral region of Cameroon?
2. How does farm business characteristics influence the financial inclusion of coffee farmers in the Littoral region of Cameroon?
3. How does microfinance institutions engagement influence the financial inclusion of coffee farmers in the Littoral region of Cameroon?

1.6 Scope of the Study

The scope of the study is to assess whether individual farmer, farm-business and microfinance characteristics matter in improving the financial inclusion among farmers in the Littoral region of Cameroon. The specific objectives are to examine how the individual farmer characteristics, farm-farm business characteristics and microfinance institutions characteristics influence financial inclusion of coffee farmers in the Littoral region. The study shall have as control variable; age, gender, years in business, marital status, household size, other income sources, education and employee's status, on financial inclusion. The geographical scope shall encompass the rural villages of Njinjou 1, Njinjou 2, New-Melong, Nkongsoung, Mouaguel, Melong which are known to have the majority of these coffee farmers. The study was carried out between October 2023 to April 2024.

1.7 Significance of the Study

The significance of this study will benefit the coffee farmers, microfinance institutions and policy makers in Cameroon.

1.7.1 Coffee Farmers in the Littoral region

This research directly benefits coffee farmers in the Littoral region by shedding light on the determinants influencing their inclusion to the financial system. By understanding the influence of individual farmer characteristics, farm business characteristics, and MFI engagement, coffee farmers can make informed decisions to enhance their agricultural practices and financial well-being. The findings can guide them in optimizing their resources, improving crop management, and accessing financial support, ultimately leading to increased coffee yields and income. The

study's findings can reveal how MFI characteristics and practices impact coffee farmers' access to credit. This knowledge is crucial as access to affordable credit is the lifeblood of many agricultural operations. By understanding how MFI characteristics facilitate long-term planning among coffee farmers, this study can help farmers set goals for their farms, families, and future generations. Long-term planning enhances the sustainability of coffee farming as a viable livelihood, encouraging ongoing coffee farmers.

1.7.2 Microfinance Institutions Financing coffee farmers

The study will contribute to the existing body of knowledge on financial inclusion of coffee farmers in the Littoral region of Cameroon. MFIs in the Littoral region and beyond can gain valuable insights from this study. Coffee farming is seasonal, and income often comes in a lump sum during the harvest season. MFIs can provide seasonal credit to cover expenses during the off-season, ensuring farmers have enough resources to manage their households and meet basic needs. By analysing the factors that influence the financial inclusion of coffee farmers, MFI will best be knowledgeable on what type of loan insurance products to protect farmers from these adverse events of loan default. MFIs can tailor their financial products and services to better suit the specific needs and challenges faced by these farmers. This can lead to more effective and targeted support, potentially increasing the success and sustainability of MFI initiatives in the coffee sector. Additionally, the study can assist MFIs in risk assessment and creating customized loan products that align with the unique characteristics of coffee farming.

1.7.3 Policy makers and the regulators

The research findings are crucial for policy makers and regulators in the agricultural sector. They can utilize the study's insights to formulate policies that support the development of the coffee industry in the Littoral region, fostering economic growth and rural development. Additionally, this research can guide regulators in implementing and enforcing regulations that ensure fair practices within the sector, protecting the interests of both coffee farmers and MFIs. Overall, the study equips policy makers and regulators with evidence-based knowledge to make informed decisions that benefit the entire coffee value chain in the region.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the theories of financial inclusion, empirical review om the measurement of financial inclusion, the relationship that exist between farm factors, individual characteristic and MFIs characteristics and financial inclusion together with ither factors affecting financial inclusion. A summary of the literature gaps and conceptual framework.

2.2 Theoretical Review

Analyzing the factors that influence the financial inclusion of coffee farmers in the Littoral region of Cameroon is a multifaceted endeavor, where various economic theories and frameworks come into play to elucidate the dynamics of financial inclusion in the coffee farming sector.

2.2.1 Information asymmetry theory in financial inclusion

The theory of information asymmetry was first introduced by George Akerlof in his seminal paper titled "The Market for Lemons: Quality Uncertainty and the Market Mechanism," published in 1970. This theory pertains to the unequal distribution of knowledge and information between financial service providers and potential clients, particularly in underserved or vulnerable populations (Steinle et al., 2014). This theory highlights that when individuals lack access to critical financial information or do not fully comprehend the terms and conditions of financial products, it creates a significant barrier to financial inclusion. The theoretical justification for employing information asymmetry theory lies in understanding the potential disparities in information between financial service providers and coffee farmers. Financial institutions often possess superior knowledge about their services, leading to potential clients being unsure about the benefits and risks of engaging with them (BESSLER et al., 2011).

Bridging this information gap is crucial for promoting financial inclusion, and it is typically achieved through financial education, regulatory measures, and the use of technology to provide transparent and accessible financial services, empowering individuals to make informed financial decisions (Oliveira et al., 2019). This theoretical review is centered on two pivotal theories: the Financial Intermediation Theory and the Loanable Funds Theory. These theories provide essential foundations for comprehending the financial inclusion processes and mechanisms at work in the

context of coffee farming, which is a vital agricultural sector in the region. While various theories and models contribute to the understanding of financial inclusion, the primary emphasis of this review will be placed on these two overarching theories, shedding light on their relevance and implications in the specific context of the Littoral region's coffee industry. By delving into these theoretical frameworks, we aim to gain a profound insight into the factors shaping financial inclusion among coffee farmers in the Littoral region of Cameroon.

2.2.2 Financial Intermediation Theory

The theory of financial intermediation has roots in the work of economists such as John Hicks and John Gurley, but one of the foundational contributions came from James Tobin. Tobin's influential paper "Commercial Banks as Creators of Money," published in 1963, provided a framework for understanding the role of banks in the creation and allocation of money and credit within an economy. Financial Intermediation Theory is an economic concept that elucidates the pivotal role of financial intermediaries, such as banks and credit unions, in facilitating the flow of funds between savers and borrowers in the financial system (Gorton and Winton, 2003). The theoretical justification for incorporating financial intermediation theory lies in examining the intermediary functions of financial institutions in facilitating credit provision, risk management, and financial market participation among coffee farmers. These intermediaries serve as intermediaries by accepting deposits from individuals and institutions and then extending loans to borrowers. The theory underlines their essential functions, including risk transformation, maturity transformation, and the provision of liquidity services (Bethune et al., 2022). By pooling and managing funds, financial intermediaries reduce information asymmetry, lower transaction costs, and allocate capital efficiently, contributing to the stability and efficiency of financial markets. This theory is instrumental in understanding the intricate dynamics of financial systems and the key role played by intermediaries in resource allocation and risk management (Scholtens and van Wensveen, 2000).

This theory provides a valuable lens through which to analyze the dynamics of financial inclusion in the context of coffee farming in the Littoral region of Cameroon. This theory posits that financial intermediaries, such as Microfinance Institutions (MFIs), play a crucial role in bridging the gap between savers and borrowers by facilitating the allocation of financial resources. In the context of the study, the MFIs act as intermediaries, offering savings accounts and outreach loan products

(two variables in the study) to coffee farmers. The terms and conditions set by MFIs for loan acquisition are central to understanding their role as financial intermediaries. By offering these financial services, MFIs contribute to improving the financial inclusion of coffee farmers, allowing them to access funds (part of financial inclusion), invest in their coffee farm businesses (linked to the farm business factors in the study). Thus, the Financial Intermediation Theory underscores the critical role of MFIs in connecting coffee farmers to the financial resources necessary for agricultural development, aligning with the study's objectives to improve the financial inclusion of among coffee farmers in the Littoral region. In capitalist economies, the process of saving and investing is centered on financial intermediaries that resemble banks, or "banks." As such, banks are a key component of economic growth. These middlemen take out loans from consumers and savings and give them to businesses that want to make investments (Gorton and Winton, 2003).

2.2.3 Loanable Fund Theory

The loanable funds theory, also known as the loanable funds market theory, traces back to classical economists such as Adam Smith and David Ricardo. However, it was most prominently developed and formalized by John Maynard Keynes in his work "The General Theory of Employment, Interest, and Money," published in 1936.The Loanable Funds Theory is an economic framework that explains how interest rates are determined in financial markets. The principal pillar of both mainstream monetary theory and the theoretical model employed by industrialized nations' central banks to inform their monetary policy decisions is the loanable funds hypothesis (Bertocco, 2013). The theoretical justification for incorporating loanable funds theory lies in understanding how interest rates and credit availability influence the borrowing behavior of coffee farmers. It posits that interest rates are the equilibrium between the supply of savings (loanable funds) from households, businesses, and financial institutions and the demand for these funds by borrowers for investment and consumption purposes. When the supply of loanable funds exceeds demand, interest rates tend to fall, encouraging borrowing and spending (Thomas and Bywaters, 2021). Conversely, when demand for funds surpasses the available supply, interest rates rise, deterring borrowing and promoting saving. This theory helps analyze the interplay between savings and investment in financial markets, impacting the allocation of capital and influencing economic activity (Fiebiger and Lavoie, 2020).

This theory is intrinsically connected to the study's exploration of financial inclusion and its and coffee farmers in the Littoral region. This theory posits that the availability of loanable funds in financial markets is a critical driver of investment and economic growth. In the context of the study, the availability of loanable funds through MFIs, specifically through outreach loan products and savings accounts, influences coffee farmers' ability to access funds for their farm business. Terms and conditions set by MFIs, as well as the coffee farmers' usage of loans (variables in the study), are integral components of the loanable funds market, which directly impact their investment decisions in the coffee farming sector. As such, the Loanable Funds Theory underscores the significance of access to loanable funds and the conditions governing their utilization, highlighting their direct relevance to the study's objective of enhancing financial inclusion amongst coffee farmers.

2.3 Empirical Review

In the context of the study on "Analyses of factors that Influence the Financial Inclusion of coffee farmers in the Littoral region in Cameroon," a comprehensive empirical review unveils critical insights. To measure financial inclusion, various dimensions are considered, including access, availability, and usage of financial services. Farm factors such as seasonality of business, collateral security, farm size, and production are pivotal in influencing financial inclusion, as they impact the need for financial services. Individual factors like credit history, financial literacy, and loan usage play a significant role in determining the extent of financial inclusion among coffee farmers. Additionally, the characteristics of Microfinance Institutions (MFIs), including terms and conditions, savings accounts, and outreach loan products, are essential factors affecting financial inclusion. Furthermore, various control variables like age, sex, gender, years in business, marital status, household size, income sources, education, and employment status must be considered due to their potential influence on financial inclusion. This empirical review underscores the multidimensional nature of financial inclusion and the intricate interplay of various factors, highlighting the significance of assessing individual farmer, farm business, and MFI characteristics influence the financial inclusion amongst coffee farmers in the Littoral region of Cameroon.

2.3.1 Farm Business Characteristics and Financial Inclusion

Several studies have contributed to understanding the factors influencing financial inclusion among coffee farmers, but there are notable weaknesses and gaps in the existing literature that

need to be addressed. Firstly, while studies such as those by Anarfo, Osei K., and Gyeke-Dako A., (2019) and Rosenberg L, Swilling M, and Vermeulen W., (2018) highlight the importance of recognizing the seasonality of coffee production in designing financial products, they often overlook the broader structural barriers within the financial sector that limit farmers' access to credit beyond specific periods of the agricultural cycle. Additionally, the focus on collateral requirements, as emphasized Chapoto and Aboagye, (2017) and Chandio et al., (2017) may oversimplify the complexities faced by smallholder farmers, failing to address the feasibility and effectiveness of alternative lending models. Moreover, while studies like those Eastwood et al., (2010) and Afolabi, (2010) underscore the influence of farm size on access to credit, they may overlook the socio-economic disparities and power dynamics that disadvantage smallholder farmers in financial access. Furthermore, while production levels, as highlighted by Feder G, Onchan T, and Raparla T, (1988), Dorward, (1999) and Fulginiti, (1998) are linked to financial inclusion, there is limited exploration of the role of market dynamics and value chain governance structures in shaping farmers' access to finance.

This current study advances the agenda of financial inclusion among coffee farmers in the Littoral region by addressing these gaps and limitations. By adopting a comprehensive approach that considers both the temporal and structural dimensions of financial exclusion, this study aims to develop more nuanced insights into the factors influencing financial inclusion. Additionally, by critically evaluating the feasibility and effectiveness of alternative lending models and considering the socio-economic context of smallholder farmers, this study seeks to provide actionable recommendations for policymakers and financial institutions to enhance financial inclusion efforts. Moreover, by examining the role of market dynamics and value chain governance in financial access, this study aims to develop more targeted and effective financial inclusion strategies that address the diverse needs of coffee farmers in the region. By addressing these gaps, this study contributes to advancing the area of financial inclusion and promoting economic well-being among coffee farmers in the Littoral region.

2.3.2 Farmer Characteristics and Financial Inclusion

Several studies have examined individual factors influencing financial inclusion among coffee farmers, but they exhibit several weaknesses and gaps that limit their applicability and effectiveness. Firstly, studies such as Asante-Addo et al., (2017) and Denkyirah et al., (2016) focus

primarily on the correlates of financial inclusion without delving into the underlying mechanisms or causal relationships, leading to a superficial understanding of how individual characteristics impact financial access. Additionally, while Dodson, (2014) and Silong and Gadanakis, (2019) highlight the importance of credit history, they overlook the contextual factors that shape creditworthiness and credit access among coffee farmers, such as informal social networks and trust mechanisms. Moreover, studies like those by Karlan et al., (2011), ZHang and Xiong, (2019) and Santoso et al., (2020) on financial education and literacy fail to account for the heterogeneity of educational backgrounds and learning preferences among coffee farmers, thereby limiting the effectiveness of financial literacy interventions. Furthermore, while Thongrak et al., (2021) and Gigih et al., (2023) emphasize the role of financial literacy, they often neglect the practical aspects of financial decision-making and management skills needed by coffee farmers to navigate complex financial landscapes effectively.

This current study of financial inclusion among coffee farmers in the Littoral region of Cameroon advances the agenda by addressing these gaps and limitations in the existing literature. By adopting a nuanced approach that goes beyond mere correlations to examine the underlying mechanisms driving financial inclusion, this study aims to provide deeper insights into how individual characteristics interact with institutional factors to shape financial access. Additionally, by considering contextual factors such as informal social networks and trust mechanisms, this study seeks to develop more holistic financial inclusion strategies that leverage existing social capital within coffee farming communities. Moreover, by tailoring financial literacy interventions to the diverse educational backgrounds and learning preferences of coffee farmers, this study aims to enhance the effectiveness of financial education initiatives and empower farmers to make informed financial decisions. Furthermore, by emphasizing the practical aspects of financial decision-making and management skills, this study seeks to equip coffee farmers with the tools and resources needed to navigate complex financial landscapes effectively and strategically invest in their farming operations.

The gaps identified in the existing body of knowledge, such as the lack of understanding of contextual factors shaping credit access, heterogeneity in educational backgrounds, and the neglect of practical financial management skills, are crucial for advancing financial inclusion efforts among coffee farmers. Addressing these gaps through targeted research and interventions could

enhance the effectiveness of financial inclusion strategies, ultimately contributing to the economic well-being of coffee farmers in the region.

2.3.3 Microfinance Characteristics and Financial Inclusion

Existing studies on financial inclusion often fall short in several aspects, limiting their effectiveness in informing policy and interventions. Firstly, while studies such as Ayele, (2015) and Singh and Padhi, (2019) emphasize the importance of microfinance institution (MFI) characteristics, they often overlook the nuanced interplay between these characteristics and the socio-economic context of coffee farming communities. By failing to consider the specific needs and challenges faced by coffee farmers in the Littoral region of Cameroon, these studies provide a superficial understanding of how MFI factors influence financial inclusion.

Moreover, while Weber and Musshoff, (2013) and Mia and Ben Soltane, (2016) recognize the significance of tailored loan products for coffee farmers, they do not delve into the process of designing and implementing such products effectively. This oversight limits the practical applicability of their findings and hinders the development of targeted financial inclusion strategies that address the unique requirements of coffee farmers in the region.

The current study of financial inclusion among coffee farmers in the Littoral region advances the agenda by addressing these gaps and limitations in existing literature. By adopting a holistic approach that considers both MFI characteristics and the socio-economic context of coffee farming communities, this study aims to provide deeper insights into how MFI factors influence financial inclusion and develop tailored interventions that effectively address the needs of coffee farmers. Furthermore, by focusing on the process of designing and implementing outreach loan products specifically tailored to the needs of coffee farmers, this study seeks to bridge the gap between theoretical knowledge and practical application, thereby enhancing the effectiveness of financial inclusion strategies in the study area.

The gaps identified in existing literature, such as the lack of consideration of socio-economic context, and the oversight in designing and implementing tailored loan products, are crucial for advancing financial inclusion efforts among coffee farmers. Addressing these gaps through targeted research and interventions could lead to more impactful and sustainable outcomes, ultimately contributing to the economic well-being of coffee farmers in the Littoral region of Cameroon.

2.3.4 Other Factors Influencing Financial Inclusion

Existing studies on financial inclusion often fail to comprehensively address the multifaceted nature of factors influencing financial inclusion among coffee farmers in the Littoral region of Cameroon. While Nadolnyak D, Hartarska V, and Griffin B, (2019) acknowledge the importance of various individual factors such as gender, years in the coffee farming business, marital status, household size, income sources, education level, and employment status, they do not delve deep into the interplay between these factors and financial inclusion dynamics. This lack of depth limits the understanding of how these individual factors collectively shape the financial inclusion landscape for coffee farmers in the region.

Furthermore, while existing studies highlight the significance of individual, farm business, and microfinance institution (MFI) characteristics, there is often a disconnect between these factors, hindering a holistic understanding of financial inclusion dynamics. By focusing solely on individual factors or MFI characteristics, these studies overlook the complex interactions between different facets of financial inclusion, thereby limiting the effectiveness of proposed interventions. The current study of financial inclusion among coffee farmers in the Littoral region advances the agenda by addressing these gaps and limitations in existing literature. By adopting a comprehensive approach that considers individual, farm business, and MFI characteristics, alongside other multifaceted factors such as gender, years in the coffee farming business, marital status, household size, income sources, education level, and employment status, this study aims to provide a nuanced understanding of financial inclusion dynamics in the region.

Moreover, by synthesizing empirical review studies and integrating various factors into a unified framework, this study seeks to bridge the gap between theoretical knowledge and practical application, thereby enhancing the effectiveness of financial inclusion strategies in the study area. By addressing the conceptual, methodological, theoretical, empirical, and practical gaps in existing literature, this study has the potential to contribute significantly to the advancement of financial inclusion efforts among coffee farmers in the Littoral region of Cameroon.

2.4 Summary of the Literature and Research Gap(s)

Authors	Year of study	Purpose of study	Findings	Gaps	How will my study fill the gaps
Mbu Daniel Tambi	2023	To identify factors affecting coffee production in Melong Cameroon	Farmers complaint of inadequate financial funding for their business	Methodological gap evidence gap. The study used the Cobb Douglass production function and it was carried out among rice farmers.	The study will look at how to improve the financing of coffee farmers through access to MFIs using a principal component analysis method.
Carlo Milana and Arvind Ashta	2020	To identify challenges and opportunities of MFIs through financial inclusion	The aim of improving living standards through MFIs has been met.	Contextual gap. The expected positive impact of MFIs on small businesses through microcredit is still not detected.	The study will look at impact of MFIs on small coffee farmer business will be met.
Fadi Hassan Shilhadeh	2018	To analyse the financial inclusion of individuals living in the MENAP	The findings show that the poor and especially females are mostly out of the financial system and the level of education enhances financial inclusion.	Contextual gap. The study looked at individuals in the MENAP nations.	This study will look at financial inclusion of coffee farmers in the Littoral region of Cameroon and their level of access to the financial institutions.
Roland Azibo Balgah, Peter Ngek Shillie and Clifort Tieh Njonyi	2022	To assess the determinants agricultural credit access among rice farmers in Cameroon	Agricultural credit access was seen to have a positive impact on the educational level of the farmer, the farming experience and the diversion of the loan received	Population gap and methodological gap. The sample size was on 126 farmers with a purposive selection sampling method.	The study shall seek to establish factors that contribute to the seeming low financial inclusion among 300 coffee farmers in the Littoral region. The random selection sampling method shall apply.

Authors	Year of study	Purpose of study	Findings	Gaps	How will my study fill the gaps
			to resolve other problems.		
Thi Truc Huong Nguyen	2020	To measure financial inclusion using a composite index for developing countries.	A composite financial index was built to make easy comparison between countries.	Methodological gap. The study used secondary data of the IMF and World bank for the period 2012 to 2018.	The study shall use primary data and will be analysed using a principal component method.
Jelena Šišara and Nataša Šarlija	2023	To identify determinants of accessing micro loans for micro and small business enterprises	Individual characteristics of the borrowers of these loans such as gender and educational level were not relevant to access microfinance services and products	Population gap. The study carried out a purposive sampling method to make sure loan beneficiaries and non-loan beneficiaries were included	The study shall seek to establish factors that contribute to the seeming low financial inclusion among 300 coffee farmers in the Littoral region. The random selection sampling method shall apply.
Sarah Kayongo and Lars Mathiassen	2023	To raise awareness about the innovative and scalable ways that MFIs may enhance financial inclusion for a greater number of underprivileged individuals, especially small-holder farmers.	The Grameen foundation designed country specific MFI models to meet country specific needs such included business model and sustainability of transfer of innovation	Contextual gap. The study looked at longitudinal data of MFIs.	The study shall use primary data collected through a questionnaire.
N'Banan Ouattara, et al.	2020	To identify and analyse determinants that are key to access microfinance credit	The key determinants found were the socio-economic and demographic requirement	Contextual gap. The study focused on farmers from a single MFI in the district of Sassandra-	The shall shall randomly select farmers belonging to different MFIs in the Littoral region of Cameroon.

Authors	Year of study	Purpose of study	Findings	Gaps	How will my study fill the gaps
			asked by the MFIs	Marahou in Ivory Coast.	
Ejigu Mulatu	2020	to determine the elements that influence farmers' savings in microfinance institutions and to evaluate the prospects and difficulties in the delivery of microfinance services	The factors that were shown to have a significant impact on the households' saving were levels of education, farm size, farm income, household expenses, distance from the center of service provision, and perception of interest rates.	Population and contextual gap. The study looked at 200 households and their saving culture.	The study shall look at 300 coffee farm holders and shall analyse whether a MFI improve their saving culture.
Sylvaine Lemeilleur et al.	2020	examines the motivations behind coffee growers' participation in certification programs that demand better farming methods.	Findings show that farmers will be encouraged to participate in a certification scheme by both monetary and non-monetary benefits.	Population gap. When compared to the total number of Brazilian coffee farms, the large coffee producers are overrepresented in the sample.	The study shall look at small coffee farmers or small farm holders in the Littoral region making the majority of the population.
Zekarias Shumeta et al.	2018	to look at the potential effects of coffee cooperative membership on food security in Southwest Ethiopian families that grow coffee.	The production of staple foods (teff and maize) is positively and significantly impacted by cooperative participation, which also promoted technological transformation through higher	Methodological gap. The study applied an inverse probability weighing (IPW) estimation in order to examine the impact of members belonging to a corporative and food security.	The study shall examine the data using the principal component analysis.

Authors	Year of study	Purpose of study	Findings	Gaps	How will my study fill the gaps
			use of fertilizer and better seeds.		
Hugues Kouadio and Lewis Landry Gakpa	2020	To measure financial inclusion drivers among oil palm and rubber tree producers	Palm oil and rubber tree producers were found poor and not financially included in terms of use and quality in dimensions.	Contextual gap and methodological gap. The measurement of financial inclusion drivers is among oil palm and rubber tree producers and the method used to analyse data is the multiple correspondence analysis (MCA)	The study shall assess drivers of financial inclusion drivers of financial inclusion among coffee farmers and data collected shall be analysed using principal component analysis (PCA).
Bradley D. Parrish et al.	2005	This study looks at two well-known market-based interventions that are being used at two Tanzanian coffee producer organizations: TechnoServe business development and Fairtrade certification.	The findings of this study indicate that while both intervention options have the ability to provide beneficial outcomes for smallholders across various domains, they are each uniquely tailored to certain market conditions.	Methodological gap. The study used the sustainable livelihood framework.	The study shall use principal component analysis (PCA).
Tian Liu, Guangwen He and Calum G. Turkey	2019	To investigate financial inclusion in rural transformation in the stricken areas of China and examine to what extent do access to credit	The usage of credit, not credit availability, had a favorable impact on farm households' entrepreneurial decisions. There was no statistical correlation	Contextual gap. The study looks at financial inclusion among entrepreneurs and how it can be fostered.	This study shall assess financial inclusion among coffee farmers in the Littoral region of Cameroon.

Authors	Year of study	Purpose of study	Findings	Gaps	How will my study fill the gaps
		foster entrepreneurial activities.	between the usage of formal and informal credit while making entrepreneurial decisions; Finally, the income of agricultural households is positively and significantly impacted by entrepreneurship.		

2.5 Conceptual Framework

The diagram below (figure 2.1) represents the relationship that exist between the dependent variable, independent variable and the control variable. The dependent variable includes; the farm business characteristics, farmer characteristics, and the microfinance institution factors together with control variables. The independent variables include farm business factors, encompassing seasonality of business, collateral security, size or acreage, and production; Farmer characteristics, subdivided into credit history, financial literacy, and usage of the loan; and MFI factors, specifically terms and conditions of savings accounts and outreach loan products. The dependent variable, financial inclusion, is comprised of three dimensions: Access, Availability, and Usage of loans. Access is measured through the presence of an account with MFIs and the receipt of financial income from formal and informal sources. Availability is gauged by the proximity of MFIs, agents or branches, and the level of daily savings participation with agents of MFIs. Usage of loans is assessed by the frequency of borrowing with MFIs and the purpose of loan utilization (personal or business). Control variables, including age, sex, gender, years in business, marital status, household size, other income sources, education, and employment status, are considered to account for potential confounding factors. By examining the relationships between these variables, the study aims to elucidate the factors that influence the financial inclusion of coffee farmers in

the Littoral region of Cameroon.

Figure 2.1: Conceptual framework

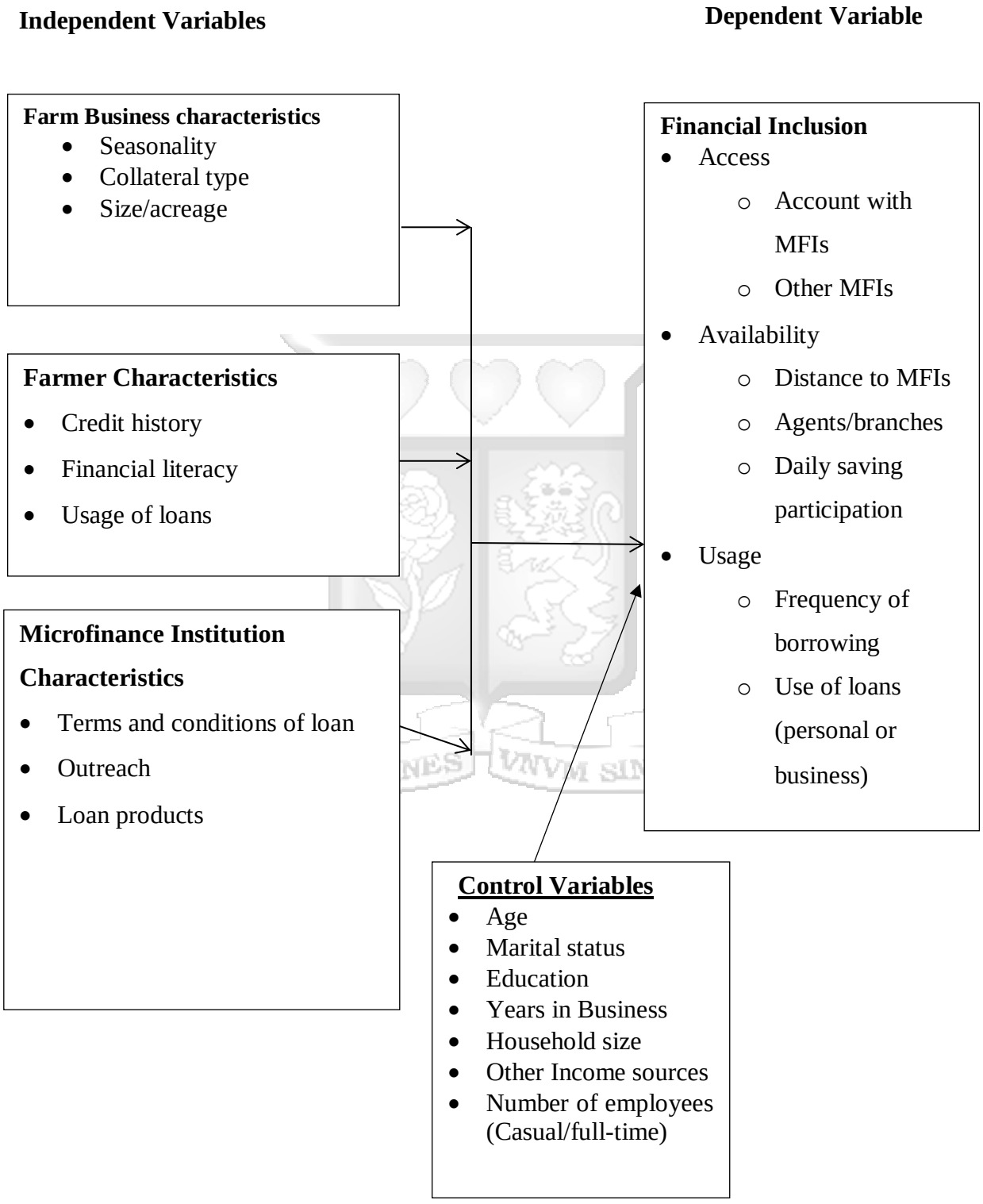


Figure 2.1: Conceptual Framework

2.5.1 Operationalization of the Variables

Variable	Variable Name	Type of variable	Definition	Supporting Literature	Supporting Theory
Financial Inclusion	Access	Dependent variable	denotes the extent to which coffee farmers have accounts with MFIs and receive financial income from both formal and informal sources.	(Kouadio and Gakpa, 2020; Nguyen, 2021)	Financial intermediation
	Availability	Dependent variable	proximity of financial institutions, agents, or branches to coffee farmers' locations and their engagement in daily savings activities through MFI agents	(Kouadio and Gakpa, 2020; Nguyen, 2021)	Financial intermediation
	Usage	Dependent variable	assesses the frequency of borrowing from MFIs and the purpose of loans, whether for personal or business use.	(Kouadio and Gakpa, 2020; Nguyen, 2021)	Financial intermediation
Farm Business characteristics	Seasonality	Independent variable	Refers to the fluctuations in coffee farming activities throughout the year, highlighting periods of peak and off-peak of production.	(Borowski and Lukasik, 2015; Bro et al., 2020)	
	Collateral type	Independent variable	pertains to the assets or property offered by coffee farmers to secure loans from Microfinance Institutions (MFIs), providing assurance for loan repayment.	(Chandio et al., 2017; Chapoto and Aboagye, 2017; Feder et al., 1988; Šišara and Šarlija, 2023)	Financial intermediation
	Size/acreage	Independent variable	describe the land area dedicated to coffee farming	(Dorward, 1999; Eastwood et al., 2010)	
	Production	Independent variable	annual coffee yield, reflecting the scale of coffee production.	(Africa, 2022; Belek and Jean-Marie, 2020; Dorward, 1999;	

Variable	Variable Name	Type of variable	Definition	Supporting Literature	Supporting Theory
				Fulginiti, 1998; Krishnan, 2017; Mia and Ben Soltane, 2016; Tambi, 2023; Tenaw and Islam, n.d.)	
Farmer characteristics	Credit history	Independent variable	indicates the financial track record of coffee farmers, including their past borrowing and repayment behavior	(Asante-Addo et al., 2017; Chandio et al., 2017; Shillie et al., 2023; Silong and Gadanakis, 2019)	Financial intermediation
	Financial literacy	Independent variable	signifies the level of knowledge and understanding that coffee farmers possess regarding financial matters and services	(Gigih et al., 2023; Santoso et al., 2020; Thongrak et al., 2021; ZHang and Xiong, 2019)	
	Usage of loan	Independent variable	identifies how borrowed funds are utilized, differentiating between personal and business purposes.	(Dodson, 2014; Kayongo and Mathiassen, 2023; Shumeta and D'Haese, 2018)	Financial intermediation
Microfinance Institution Factors	Terms and conditions of loan	Independent variable	to the specific rules and regulations set by Microfinance Institutions (MFIs) regarding the disbursement and repayment of loans, which coffee farmers must adhere to.	(Kyereboah-Coleman, n.d.; Ouattara et al., 2020; Weber and Musshoff, 2013)	Loanable fund theory

Variable	Variable Name	Type of variable	Definition	Supporting Literature	Supporting Theory
	Outreach Loan products	Independent variable	the range of loan offerings provided by MFIs to coffee farmers, designed to meet their unique financial needs and requirements for coffee farming.	(Ayele, 2015; Mulatu, 2020; Shu and Oney, 2014; Singh and Padhi, 2019)	Financial intermediation
Control Variables	Age	Independent variable	Age represents the chronological age of coffee farmers	(Nadolnyak et al., 2019)	
	Marital status	Independent variable	categorizes farmers into different relationship statuses, such as single, married, divorced, or widowed.	(Nadolnyak et al., 2019)	
	Education Years in Business	Independent variable	signifies the duration of coffee farming experience, reflecting farmers' expertise in the field.	(Weber and Musshoff, 2013)	
	Household size	Independent variable	represents the number of people living in the same household as the coffee farmer.	(Belek and Jean-Marie, 2020)	
	Other Income sources	Independent variable	identify and categorize additional sources of income beyond coffee farming.	(Liu et al., 2021; Ojong, 2019; Silong and Gadanakis, 2019)	
	Gender	Independent variable	classifies coffee farmers into male or female categories, contributing to the exploration of gender-related factors.	(Nadolnyak et al., 2019)	
	Number of employees (Casual/full-time)	Independent variable	distinguish between coffee farmers who work as full-time employees and those who work as casual or part-time employees while engaging in coffee farming as a supplementary activity.	(Ojong, 2017)	

Authors have developed new indicators of bank access across three categories of services - deposits, loans, and payments - by examining access and usage dimensions of financial services

(Honohan, 2008). However, financial inclusion (FI) is a complex concept that cannot be adequately captured by single metrics like bank account ratios or ATM quantities alone (CCmara and Tuesta, 2014). Consequently, various studies have attempted to create a comprehensive assessment system known as the FI index, which considers dimensions such as outreach, usage, transaction cost, and ease of transaction (Gupte et al., 2012; Sarma, 2008, 2012, 2015, 2016). While earlier studies have faced criticism for arbitrarily assigning weights to variables and dimensions, recent efforts, such as those by Park and Mercado, (2016) and Amidzic et al. (2014), have employed methods like Principal Component Analysis (PCA) and Factor Analysis (FA) to address this issue (Park and Mercado, 2016); Amidzic et al., 2014). Despite advancements, challenges remain in fully utilizing available data and achieving consensus on measurement methodologies (CCmara and Tuesta, 2014). Additionally, researchers have highlighted the need to include services beyond banking-related ones in FI indices to ensure a comprehensive assessment (Mialou and Amidzic, 2017, Sarma, 2016, and Anarfo et al., 2019). While various approaches have been proposed to gauge FI, a formal consensus regarding measurement has not yet been reached (Park and Mercado, 2016). Various methods have been proposed, including indicators based on access and usage of financial services pioneered by Beck et al., (2007), as well as measures of savings, borrowing, payments, and risk management suggested by Allen et al., (2012).

In the past, policymakers in developing nations predominantly assessed FI using financial sector outreach metrics such as the quantity of bank credit, deposits, ATMs, and bank branches. However, since the global financial crisis of 2007, there has been a shift towards recognizing the importance of sustainable financial inclusion development. This has led to increased concentration on FI assessment, with researchers employing various methodologies, including PCA and Sarma's multidimensional approach. However, the complexity of FI as a concept presents challenges in its measurement. Single metrics such as bank account ratios or the quantity of automated teller machines (ATMs) offer limited and imprecise information about the comprehensiveness of the financial system. This has led to misunderstandings regarding the degree of FI in economies, prompting the development of assessment systems like the FI index. For instance, Gupte et al., (2012) introduced the FI index in India, averaging four key dimensions: outreach, usage, transaction cost, and ease of transaction, while Sarma (2008, 2012, 2015, 2016) focused on usage, banking penetration, and availability of banking services. Despite advancements in FI

measurement, criticisms persist regarding the arbitrary assignment of weights to variables and dimensions in existing indices. Efforts to address these criticisms, such as those by Park and Mercado (2016), have utilized methodologies like Principal Component Analysis (PCA) or Factor Analysis (FA) to ascertain more accurate weights for computing the FI index. However, challenges remain in fully utilizing available data and standardizing measurement approaches. The low rate of financial inclusion in Cameroon is observed whereby, only 15% of adults have an account at a formal financial institution, and only 4% of adults have at least one loan outstanding from a regulated financial institution, as compared to the overall statistics for Africa which stands at 41% and 10% respectively, making it important for this study to be carried.

While attempts have been made to create composite indices to gauge FI levels, challenges persist in achieving a formal consensus on measurement techniques. Different methodologies and varying indicators used across studies contribute to inconsistencies in FI measurement. To address these challenges, this study aims to develop a comprehensive FI index tailored to the context of coffee farming in the Littoral region of Cameroon. By incorporating a wide range of factors beyond traditional banking services, such as farm business characteristics, microfinance characteristics and the farmer attributes, this study seeks to provide a more nuanced assessment of financial inclusion in the region and contribute to the advancement of financial inclusion initiatives.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This is a comprehensive set of protocols or techniques used during data collecting and analysis is referred to as research methodology. The chapter is divided into sections, each of which is thoroughly investigated to highlight its importance. Target population, sample size and technique, data collection instruments, data collection procedure, pilot study, validity and reliability of research instrument, data processing and analysis, and ethical considerations are among the sections that comprise the research design.

3.2 Research Philosophy

The research philosophy guiding this study, rooted in pragmatism and post-positivism, shapes its approach to investigating the influence of various factors on the financial inclusion of coffee farmers in the Littoral region of Cameroon. Pragmatism, as described by Adam (2014), emphasizes practical problem-solving, aligning with the study's objective of analyzing the determinants of financial inclusion. This philosophy acknowledges the need for practical solutions to real-world problems, making it well-suited for the study's goal of understanding and addressing the challenges faced by coffee farmers in accessing financial services. Additionally, Singh (2015) defines positivism as a philosophy grounded in observable facts, directing the study towards empirical data collection and quantitative analysis to uncover causal relationships among variables. By embracing a post-positivist stance, the study sought to employ rigorous quantitative methods to derive objective insights into the factors influencing financial inclusion in the region.

The study's philosophical foundation, as discussed by Saunders et al. (2009), underscores the importance of research assumptions in shaping knowledge development and guiding methodological choices. By adhering to a positivist perspective, the study emphasized the objective examination of observable social reality and the derivation of evidence-based insights from quantitative data. This approach, outlined by Creswell and Clark (2017) and Reed, (2012), prioritizes statistical analysis and empirical measurement to inform evidence-based strategies for improving financial inclusion among coffee farmers in the region. The pragmatic and post-positivist philosophy adopted in this study enables the integration of practical problem-solving

with empirical analysis, offering a comprehensive understanding of the complex dynamics influencing financial inclusion. Overall, the study's research philosophy emphasizes a practical, data-driven approach underpinned by a positivist perspective, aiming to provide robust insights into the factors influencing financial inclusion in the Littoral region of Cameroon.

3.3 Research Design

The research design for this study, aimed at investigating the factors that influence the financial inclusion of coffee farmers in the Littoral region of Cameroon, follows an explanatory research design with a quantitative approach. The study involved the collection of numerical data to establish causal relationships among variables. The independent variables, including Coffee farm business characteristics, farmer characteristics, and MFI factors, will be assessed quantitatively to determine their influence on the dependent variable, which is financial inclusion with its dimensions of Access, Availability, and Usage of loans. Control variables, encompassing age, sex, gender, years in business, marital status, household size, other income sources, education, and employment status, will be incorporated into the analysis. The explanatory research design enabled a comprehensive exploration of these variables, allowing for a deeper understanding of the factors affecting the financial inclusion of coffee farmers in the Littoral region through statistical analyses and empirical evidence. The design chosen for this study is explanatory research, which aligns with the aim of uncovering causal relationships and providing explanations for observed phenomena through quantitative analysis.

3.4 Population and Sampling

The population in the Littoral region is estimated to 3,416,473 according to the Cameroon National Statistics, 2022, majority of who live in the city of Douala, the capital city of the Littoral region, making the rural area less populated. The population is mostly characterized by youths, who are more concentrated in the city Centre, in search for better opportunities. The population of the Melong sub-division is estimated to 89,534 people as of 2023, most of whom are involved into agriculture. According to the delegation of agriculture in the Melong sub-division, which operated under the Ministry of Agriculture in Cameroon as a decentralized unit, the estimated number of coffee farmers are known to be 1,579, among which only 534 are accessible.

The sample size will be derived from the formula

$$n = \frac{(z^2 pq)}{e^2}$$

where

n = the sample size,

z = the confidence level,

p = the estimated proportion of the population with the characteristic of interest,

q = the estimated proportion of the population without the characteristic of interest, and

e = the margin of error

Given that, z= 1.960, p= 0.5, q = 0.05, n= 384 coffee farmers.

A total of 384 questionnaires will be distributed across the targeted rural areas in the Littoral region, namely, Njinjou 1, Njinjou 2, New-Melong, Nkongsoung, Mouaguel, Melong. The selection criteria shall use the random sampling method in the identified zone of Melong. Those selected shall include farmers engaged in the cultivation of coffee.

These questionnaires will be translated as well into French and designed to gather comprehensive information from coffee farmers regarding their financial practices, individual characteristics, farm business details, and engagement with Microfinance Institutions (MFIs). Questions will be structured to collect data on variables such as seasonality of the coffee business, collateral security, farm size or acreage, production, credit history, financial literacy, usage of loans, terms and conditions or savings account, outreach loan products, as well as demographic and control variables.

3.5 Data Collection Methods

The data collected was primary. The data was gathered through the administration of research questionnaires. Before starting to gather data, the researcher requested for permission from the post-graduate students' office. Additionally, a permit from the Ministry of Scientific Research and Innovation (MINRESI) in Cameroon was obtained, through the delegation of the Melong sub-division and the Delegate of Agriculture in the Melong Sub-division was sought and obtained.

Respondents were informed by the researcher that full confidentiality will be upheld and that the goal of the questionnaires is exclusively to gather data for research purposes. The participants were be guaranteed that their involvement in the study is completely voluntary and that they are free to leave at any time. Two research assistants were used to administer the questionnaires.

3.6 Data Processing and Analysis

In this research study, the process of transforming unprocessed data into a legible format that may be utilized, examined, and understood is known as data processing and analysis (Rahi, 2017). Primary data was collected by the use of a questionnaire. Prior to processing, the gathered data was sanitized to make sure it is error-free. It was then loaded into SPSS, or the Statistical Package for the Social Sciences.

The study was aimed at analysing factors that influence the financial inclusion of coffee farmers in the Littoral region of Cameroon, the research methodology employed the FI (Financial Inclusion) Index via PCA (Principal Component Analysis) as a quantitative approach to assess and construct a comprehensive financial inclusion index. The primary method for data collection involved administering questionnaires to coffee farmers in the Littoral region.

Principal Component Analysis (PCA) was employed to create the FI Index, which will encompass multiple dimensions of financial inclusion (CCmara and Tuesta, 2014). PCA is a statistical technique used to reduce data complexity by extracting principal components from the variables collected through the questionnaires. In this context, PCA helped to identify the key dimensions of financial inclusion and determine appropriate weights for each dimension. The resulting FI Index will be used to assess the levels of financial inclusion among coffee farmers.

By employing the FI Index via PCA, the research methodology allowed for a structured and data-driven approach to comprehensively assess the financial inclusion of coffee farmers in the Littoral region. The questionnaire-based data collection process, along with PCA, facilitated the quantitative analysis of the study's variables and their relationships, ultimately providing valuable insights into the impact of individual farmer, farm business characteristics, and MFI characteristics on financial inclusion in the region.

Information was coded, arranged, and analyzed using SPSS in order to produce the quantitative report. Both descriptive and inferential statistics were used to analyze the data. The inferential

statistics are regression analysis and correlation, while the descriptive statistics are mean, standard deviation, percentages, and frequencies. Model fitness, variance analysis, and regression coefficients are displayed under the regression analysis. The model for multiple regression will be;

$Y = \alpha_0 + \beta_i X_i + \beta_j X_j + \beta_n X \sum_{k=n}^{n} \text{Controls} + e_i$

The specific model includes;

$FI = \alpha_0 + \beta_1$ farm business_char $+ \beta_2$ farmer_char $+ \beta_3$ MFI_factor $+ \beta_4$ Age $+ \beta_5$ Gender $+ \beta_6$ Household_size $+ \beta_7$ Marital status $+ \beta_8$ Edu $+ \beta_9$ Other_income $+ \beta_{10}$ Years_in busness $+ \beta_{11}$ Number_of employee $+ e_i$

Where: s

FI = Financial Inclusion

α_0 = Constant

X_1 = Farm business characteristics

X_2 = Farmer characteristics

X_3 = MFI factors

X_4 = Age

X_5 = Gender

X_6 = Household size

X_7 = Marital status

X_8 = Education

X_9 = Other incomes

X_{10} =Years in business

X_{11} = Number of employees

e_i = Error

FI= Financial Inclusion

$\beta_1, \beta_2, \ldots \beta_{11}$ = Coefficients

In order to ensure that the scale on which they are assessed is irrelevant, each dimension's indicators were standardized to have values between zero and one prior to employing PCA. where one denotes financial inclusion and zero denotes financial exclusion.

3.7 Research validity and reliability

The validity and reliability of this study have been ensured through several rigorous methodological practices. To uphold validity, careful attention has been given to the operationalization of variables, utilizing established measures and pre-testing new ones to accurately capture the intended concepts. The explanatory research design with quantitative data collection methods facilitates a comprehensive examination of variable relationships, enhancing internal validity. Additionally, efforts to minimize bias and confounding variables have been made through meticulous data collection and analysis procedures. For reliability, standardized data collection instruments and protocols have been employed to gather data consistently across participants and settings. Statistical analyses were used to assess the reliability of measures and findings, including test-retest reliability and inter-rater reliability analyses to evaluate stability over time and across observers, respectively. By adhering to these methodological standards, the study aims to produce credible and robust findings that contribute to the existing knowledge on the financial inclusion of coffee farmers in the Littoral region of Cameroon.

3.8 Research Quality

According to Cronbach (1951), reliability is the degree to which an instrument measures the same thing every time it is used with similar participants in the same conditions. The Cronbach alpha co-efficient was computed by the researcher to guarantee dependability. The internal consistency of the questionnaire's items was evaluated using Cronbach Alpha (Carmines and Zeller, 1979). According to Taber (2018), the study's items' Cronbach's alpha values shouldn't be less than 0.8, although Gliem and Gliem (2003) advise that the values should be higher than 0.7. The greater the internal consistency and reliability, the closer the Cronbach's alpha coefficient is to 1. Consequently, the variables in this study that have a Cronbach alpha of 0.7 or higher will be deemed appropriate.

3.9 Ethical Issues in Research

This study shall ensure that research guidelines are observed in the conduct of the study. The research also ensured that the ethical review committee approval was sought from the Strathmore Business School before undertaking the study. The research obtained a research permit from the Delegation of the Melong sub-division and as well as from the Ministry of Agriculture and Rural Development (MINADER) in Cameroon. The study shall also ensure that all the responses obtained are treated with the utmost confidentiality, and the review of the same was conducted for academic purposes only. The study ensured that the respondent's participation is voluntary.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This topic shall be explaining the sample characteristics, descriptive statistics, correlation analysis, multivariate results, PCA results, summary of results, findings from the questionnaire survey, and the triangulation of primary and secondary results.

4.2 Sample Characteristics

Characteristics of the sample population involved in our study on financial inclusion among coffee farmers in the Littoral region of Cameroon. Our sample comprises a total of 346 respondents actively engaged in coffee farming within the region. The demographic profile of the sample reveals that the majority of participants are male, while females make up the remaining portion. In terms of age distribution, the majority of respondents fall within the age range of 40 to 60 years, followed by participants aged over 60 years and those aged between 25 to 39 years.

Regarding marital status, the majority of participants identify as married, while single individuals and widowed individuals represent smaller proportions. When examining household size, the data reveals that the majority of households have between 5 to 9 members. Furthermore, a significant proportion of participants have completed primary school education, followed by secondary school education and a smaller proportion who have attained a high school or university education.

Lastly, when examining employment status, the data reveals that the majority of participants are self-employed. A smaller proportion of participants are classified as casual employees, while another portion falls under the "Other" category. Overall, these sample characteristics provide valuable insights into the demographic, socioeconomic, and occupational profile of the participants involved in our study, which is essential for understanding the context of financial inclusion among coffee farmers in the Littoral region of Cameroon.

4.3 Response rate

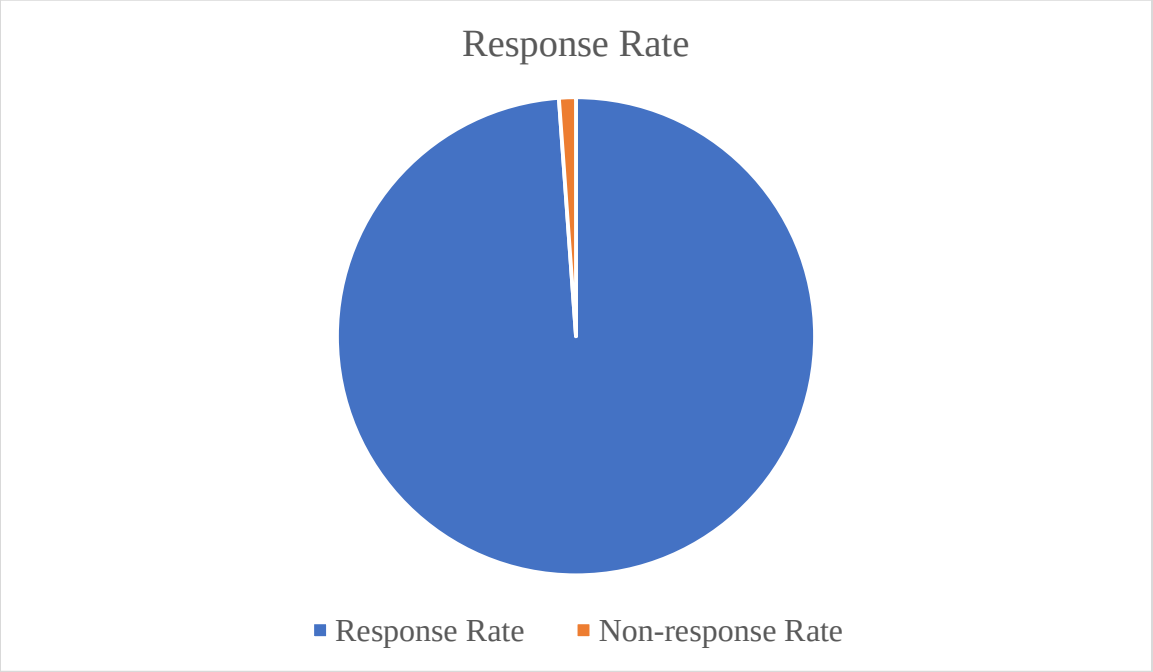


Figure 1: Response Rate

Source: Field Work, 2024

4.3 Descriptive statistics

In this section, we shall look at all demographic information relating to gender, age and other information from participants. Each table presents the data while there is text below each table that explains the results

Table 1: Gender of Responders

Gender of participants					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Male	263	76.0	76.0	76.0
	Female	83	24.0	24.0	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

In table 1 above, we present the gender distribution of the participants in our study. From the 346 respondents, 263 (76.0%) identified as male, while 83 (24.0%) identified as female. These percentages represent the valid percentage of each gender category, with 76.0% for males and

24.0% for females. This table provides a clear overview of the gender composition of our sample, which is essential for understanding the demographic characteristics of our study population.

Table 2: Age of Responders

Age of participants					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	25-39 years	56	16.2	16.2	16.2
	40-60 years	221	63.9	63.9	80.1
	>60 years	69	19.9	19.9	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

In table 2, the age distribution of participants in our study. From a total of 346 respondents, 16.2% were aged between 25 and 39 years, 63.9% were aged between 40 and 60 years, and 19.9% were aged over 60 years. These percentages reflect the valid percentage of participants falling within each age group. The cumulative percent column indicates the proportion of participants accounted for up to each category. This table provides insight into the age demographics of our sample, which is crucial for understanding the age composition of the participants involved in our research.

Table 3: Marital Status

Marital Status of participants					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Single	24	6.9	6.9	6.9
	Married	315	91.0	91.0	98.0
	Widowed	7	2.0	2.0	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

Among the total of 346 respondents, 6.9% identified as single, 91.0% as married, and 2.0% as widowed as presented in table 3. These percentages represent the valid proportion of participants within each marital status category. This information is essential for understanding the demographic profile of our sample. It provides insights into the marital status distribution among participants.

Table 4: House Hold Size

Household Size					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	1	14	4.0	4.0	4.0
	< 3	25	7.2	7.2	11.3
	3 - 4	30	8.7	8.7	19.9
	5 - 6	113	32.7	32.7	52.6
	8 - 9	112	32.4	32.4	85.0
	10 - 11	33	9.5	9.5	94.5
	12 >	19	5.5	5.5	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

In table four, it is seen that among the 346 respondents, the majority of households have between 5 to 9 members, with 32.7% having 5-6 members and 32.4% having 8-9 members. Additionally, 9.5% of households have 10-11 members, and 5.5% have 12 or more members. Smaller households, with 1 to 4 members, represent a smaller portion of the sample, ranging from 4.0% to 8.7%. This information sheds light on the composition of households within our study population, which is important for understanding the dynamics of financial decision-making, resource allocation, and social support systems within different household sizes.

Table 5: Level Education

Level of Education					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Primary School	193	84.7	55.7	55.7
	Secondary School	143	12.4	41.4	97.1
	High / University	10	2.9	2.9	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

Table five presents the education status of participants. We examine the level of education among the participants in our study. Of the 346 respondents, the majority, comprising 84.7%, have

completed primary school education. Secondary school education is the next most common level, with 12.4% of participants having completed it. A smaller proportion, 2.9%, have attained a high school or university education. This breakdown provides valuable insight into the educational background of our sample population. Understanding the distribution of educational levels is crucial for analyzing how education may influence financial decision-making, access to resources, and overall socioeconomic status among participants.

Table 6: Employment Status

Employment Status					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Casual Employee	4	1.2	1.2	1.2
	Self-employed	338	97.7	97.7	98.8
	Other	4	1.2	1.2	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

Table six shows the employment status of the participants in our study. Among the 346 respondents, the vast majority, accounting for 97.7%, are self-employed. This suggests that a significant portion of the participants are engaged in entrepreneurial activities or are their own bosses in some capacity. Only a small proportion, 1.2%, are classified as casual employees, while another 1.2% fall under the "Other" category, which may include individuals with various employment arrangements such as part-time or temporary work. Understanding the distribution of employment statuses is essential for analyzing the economic circumstances and livelihood strategies of the participants.

Table 7: Number of Casual Employees

Number of casual employees					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	Zero	137	39.6	39.6	39.6
	< 3	24	6.9	6.9	46.5
	4 - 5	24	6.9	6.9	53.5
	6 - 7	44	12.7	12.7	66.2
	8 - 9	79	22.8	22.8	89.0
	10 >	38	11.0	11.0	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

In table seven, we examine the number of casual employees within the study participants. The data reveals that 39.6% of respondents have zero casual employees, indicating that a significant portion of participants do not employ casual workers. However, among those who do, the distribution varies. For instance, 12.7% of participants employ between 6 to 7 casual employees, while 22.8% have between 8 to 9 casual employees. Furthermore, 11.0% of participants employ 10 or more casual workers. This breakdown provides insights into the employment practices of participants, shedding light on the size and structure of their casual workforce. Understanding the number of casual employees is essential for analyzing labor dynamics, business operations, and economic contributions within the study population.

Table 8: Years of experience in Coffee Farming

Years in Coffee Farming Business					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	< 3 Years	10	2.9	2.9	2.9
	4 - 5 Years	7	2.0	2.0	4.9
	6 - 7 Years	18	5.2	5.2	10.1
	8 - 9 Years	55	15.9	15.9	26.0
	10 Years >	256	74.0	74.0	100.0
	Total	346	100.0	100.0	

Source: Field Work, 2024

In table eight, years of experience in the coffee farming business among the study participants is shown above. The data shows that the majority, comprising 74.0% of respondents, have been involved in coffee farming for more than 10 years. Additionally, 15.9% of participants have 8 to 9 years of experience, while smaller proportions have 6 to 7 years (5.2%), 4 to 5 years (2.0%), and less than 3 years (2.9%) of experience in coffee farming. This breakdown provides valuable insight into the level of expertise and longevity within the coffee farming community among the study population. Understanding the distribution of years in coffee farming is crucial for analyzing factors such as skill development, industry knowledge, and resilience within the coffee farming sector.

4.5 Other analyses: PCA results.

Table 9: KMO Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.756
Bartlett's Test of Sphericity	Approx. Chi-Square	1677.272
	df	300
	Sig.	.000

Source: Field Work, 2024

In this section, we present the results of the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's Test of Sphericity, which were conducted as preliminary assessments to determine the suitability of the data for principal component analysis (PCA). The KMO measure evaluates the sampling adequacy of the data, indicating whether the dataset is appropriate for factor analysis. In our analysis, the KMO value was found to be 0.756, suggesting that the variables included in our study are reasonably related to each other, supporting the feasibility of conducting PCA.

Furthermore, Bartlett's Test of Sphericity was employed to assess whether the correlation matrix among variables is suitable for factor analysis. The test yielded an approximate chi-square value of 1677.272 with 300 degrees of freedom, and a significant p-value of 0.000 ($p < 0.001$). This indicates that the correlations between variables are significantly different from an identity matrix, providing further support for the appropriateness of conducting PCA.

These preliminary findings align with the overarching goal of our study, which aims to explore the underlying structures and relationships within the dataset pertaining to [provide a brief overview of the research focus]. The robustness of the KMO measure and the significant results from Bartlett's Test underscore the suitability of our data for PCA, laying a solid foundation for the subsequent analyses and interpretations presented in this study.

Table 10: Communalities

Communalities		
	Initial	Extraction
I regularly keep track of my coffee farming expenses and profits using financial records.	1.000	.886
I explore diverse marketing strategies to maximize the profit from my coffee farming business.	1.000	.807
I make informed decisions about investment opportunities related to my coffee farming business.	1.000	.865
I engage in collaborative initiatives with other coffee farmers to enhance market access and bargaining power.	1.000	.663
I consistently seek feedback from customers and stakeholders to improve my coffee farming farm business characteristics.	1.000	.877
I possess adequate knowledge about financial products and services available for coffee farmers.	1.000	.885
I have a strong sense of commitment and dedication towards improving my financial situation through coffee farming.	1.000	.921
I am open to adopting new technologies and innovations that can enhance the efficiency of my coffee farming activities.	1.000	.746
I actively seek out networking opportunities and partnerships to expand my coffee farming business and financial opportunities.	1.000	.819
I continuously seek opportunities for personal and professional growth to enhance my capabilities as a coffee farmer.	1.000	.787
I find microfinance institutions (MFIs) to be reliable sources of financial support for my coffee farming endeavors.	1.000	.736
I have experienced positive impacts on my coffee farming business as a result of accessing microfinance services.	1.000	.730
I feel confident in the transparency and fairness of the interest rates and repayment terms offered by microfinance institutions.	1.000	.751
I believe that microfinance services have contributed to increasing my financial resilience and ability to cope with unforeseen challenges in coffee farming.	1.000	.881
I would recommend microfinance services to other coffee farmers as a viable means to enhance financial inclusion and stability.	1.000	.910
I have access to a range of financial services tailored to the needs of coffee farmers.	1.000	.849

I feel empowered to make informed financial decisions regarding my coffee farming activities.	1.000	.813
I perceive financial institutions as welcoming and supportive of coffee farmers like myself.	1.000	.845
I believe that financial inclusion has positively impacted my overall economic well-being as a coffee farmer.	1.000	.864
I am satisfied with the level of financial support and services available to me as a coffee farmer in the Littoral region.	1.000	.718
I perceive financial inclusion as a key factor in promoting the growth and sustainability of my coffee farming business.	1.000	.846
I have been able to build financial reserves and savings through the financial services accessible to me as a coffee farmer.	1.000	.789
I feel confident in my ability to access credit and loans to invest in the expansion and improvement of my coffee farming operations.	1.000	.895
I actively participate in financial training programs provided by agricultural cooperatives or organizations.	1.000	.837
I have access to reliable information and resources to make informed decisions about financial matters related to my coffee farming.	1.000	.890
Extraction Method: Principal Component Analysis.		

Source: Field Work, 2024

The table displays the communalities before and after extraction in a principal component analysis (PCA) of various statements related to coffee farming and financial practices. Communalities represent the proportion of variance in each statement that is accounted for by the extracted factors.

Initial Communalities: These values, all initially set to 1.000, indicate the total variance explained by each statement before PCA extraction.

Extraction Communalities: These values represent the proportion of variance retained in each statement after extraction. They indicate how much of the original variance in each statement is explained by the extracted factors.

Key Points:

Variance Retention: After PCA extraction, the communalities range from .663 to .921, indicating that the factors retained in the analysis explain a substantial portion of the variance in the statements.

Dimensionality Reduction: PCA involves reducing the dimensionality of the data by retaining the most important information captured by the extracted factors. The communalities reflect how well the original statements are represented by the extracted factors.

Interpretation: Higher communalities suggest that the corresponding statements are well represented by the extracted factors and contribute more substantially to the overall understanding of the data.

Overall, the communalities provide insight into how well the extracted factors explain the variance in the statements related to coffee farming practices and financial inclusion. This information helps to assess the effectiveness of PCA in summarizing the data and identifying underlying patterns or constructs within the dataset.

Table 11: Variances Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.887	35.548	35.548	8.887	35.548	35.548	4.503	18.013	18.013
2	3.006	12.024	47.572	3.006	12.024	47.572	4.338	17.353	35.367
3	2.859	11.436	59.007	2.859	11.436	59.007	3.174	12.695	48.062
4	2.103	8.411	67.418	2.103	8.411	67.418	2.912	11.647	59.709
5	1.397	5.589	73.008	1.397	5.589	73.008	2.504	10.017	69.725
6	1.320	5.280	78.287	1.320	5.280	78.287	1.621	6.484	76.210
7	1.038	4.151	82.438	1.038	4.151	82.438	1.557	6.228	82.438
8	.792	3.166	85.604						

9	.706	2.822	88.427						
10	.584	2.338	90.764						
11	.490	1.960	92.724						
12	.314	1.255	93.979						
13	.265	1.059	95.038						
14	.219	.877	95.915						
15	.190	.761	96.676						
16	.150	.599	97.275						
17	.133	.531	97.806						
18	.121	.485	98.291						
19	.090	.361	98.652						
20	.085	.340	98.991						
21	.069	.277	99.268						
22	.067	.268	99.536						
23	.055	.221	99.757						
24	.040	.159	99.917						
25	.021	.083	100.000						
Extraction Method: Principal Component Analysis.									

Source: Field Work, 2024

The cumulative percentage, as observed at 82.438% in our analysis, provides an indication of the collective explanatory power of the principal components derived from the principal component analysis (PCA). This metric signifies the extent to which the identified principal components elucidate the total variability inherent in our dataset, specifically regarding the factors influencing financial inclusion among coffee farmers in the Littoral region of Cameroon. In essence, it quantifies the degree to which our analysis comprehensively captures the salient dimensions of the underlying phenomena.

Eigenvalues, on the other hand, serve as quantitative measures of the variance explained by each principal component. Higher eigenvalues denote a greater proportion of variance accounted for by the corresponding principal component. In our investigation, the

initial eigenvalues and subsequent extraction sums of squared loadings delineate the variance explained by each principal component before and after the extraction process, respectively. These values offer insights into the relative significance of each principal component in illuminating the underlying structure of the data, thereby aiding in the discernment of the most influential dimensions.

Understanding these statistical metrics is paramount as they underpin the validity and robustness of our analysis. A high cumulative percentage coupled with discernibly higher eigenvalues instills confidence in the efficacy of our PCA methodology, affirming that the identified principal components effectively capture the essential variability inherent in the factors affecting financial inclusion among coffee farmers. Additionally, the scree plot, which graphically represents the eigenvalues against the number of principal components, serves as a visual aid in determining the optimal number of components to retain for further analysis, ensuring a parsimonious yet

informative model selection process.

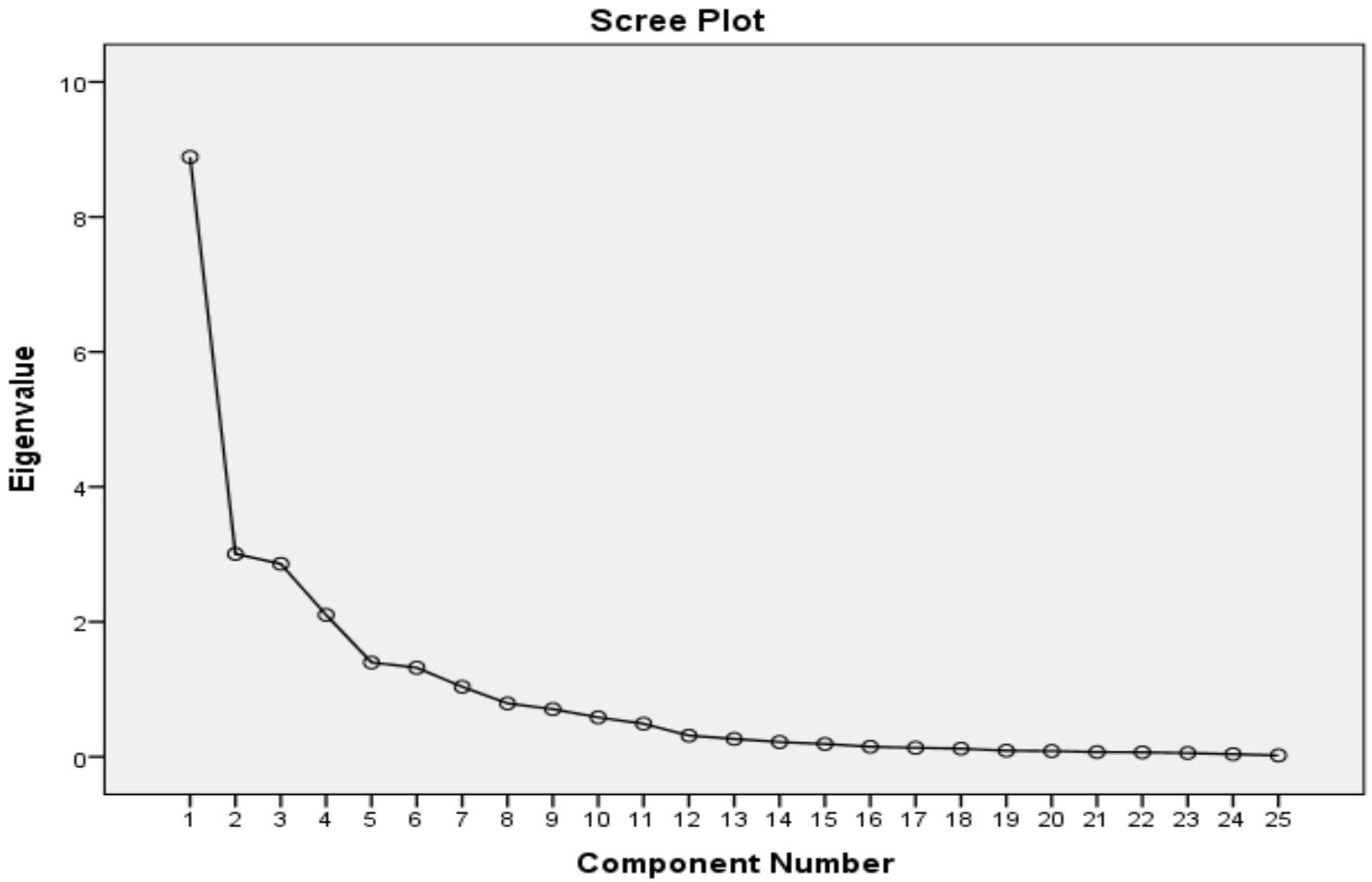


Figure 2: Scree Plot

Source: Field Work, 2024

4.6 Correlation analysis

Table 12: Correlations

Correlations						
			Farm business characteristics	Farmer Characteristics	Microfinance Institutions	Financial Inclusion
Spearman's rho	Farm business characteristics	Correlation Coefficient	1.000	.458**	-.083	.594**
		Sig. (2-tailed)	.	.000	.494	.000
		N	346	346	346	346
	Farmer Characteristics	Correlation Coefficient	.458**	1.000	.293*	.906**
		Sig. (2tailed)	.000	.000	.014	.000
		N	346	346	346	346
	Microfinance Institutions	Correlation Coefficient	.083	.293*	1.000	.017
		Sig. (2-tailed)	.494	.014	.000	.887
		N	346	346	346	346
	Financial Inclusion	Correlation Coefficient	.594**	.906**	.017	1.000
		Sig. (2-tailed)	.000	.000	.887	.000
		N	346	346	346	346
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Source: Field Work, 2024

Farm business characteristics and Farmer Characteristics: The correlation coefficient between Farm business characteristics and Farmer Characteristics is 0.458. This suggests a moderate positive relationship between these two variables. Importantly, this relationship exists independently of Financial Inclusion. In other words, as farm business characteristics improve among coffee farmers, there tends to be a corresponding improvement in farmer characteristics, regardless of their level of financial inclusion.

Farmer Characteristics and Microfinance Institutions: The correlation coefficient between Farmer Characteristics and Microfinance Institutions is 0.293. This positive relationship indicates that

certain farmer characteristics may influence their engagement with microfinance institutions. Again, this relationship is observed independently of Financial Inclusion.

Microfinance Institutions and Financial Inclusion: Despite microfinance institutions being a key focus of our study, the correlation coefficient between Microfinance Institutions and Financial Inclusion is only 0.017. This minimal correlation suggests that the presence of microfinance institutions may not necessarily lead to greater financial inclusion among coffee farmers in the Littoral region. This observation is crucial as it highlights the need to explore other factors beyond microfinance institutions to understand and enhance financial inclusion in the target population.

Farm business characteristics and Financial Inclusion: The strongest correlation among all pairs is between Farm business characteristics and Financial Inclusion, with a coefficient of 0.594. This robust positive relationship indicates that improvements in farm business characteristics among coffee farmers are associated with higher levels of financial inclusion. This relationship holds true independently of the other variables considered in our analysis.

By recognizing the independence of variables except for Financial Inclusion, we gain a clearer understanding of the unique relationships between each variable and financial inclusion among coffee farmers in the Littoral region of Cameroon. These insights help us identify specific factors that may directly influence financial inclusion outcomes, guiding future interventions and research efforts in the field.

4.5 Regression analysis

Log Likelihood	Number of Obs	LR Chi2(10)	Prob >Chi2	Pseudo R2
237.67343	346	124.04	0.0000	0.5512

Table 13: Summary of Marginal Effects

Average Marginal Effects **Number of Obs = 346** **Expression: FI (Financial Inclusion), predict ()**						
Variable	**Dy/dx**	**Std. err.**	**z**	**P>|z|**	**[95% Conf. interval]**	
Farmer Characteristics	.5852	.0023	0.436	0.006	.0225	.562
Micro Finance Institutions	0.1056	0.135	4.203	.0530	.0303	.236
Farm business characteristics	.2586	.0445	.0235	.0026	..0156	.0334

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.597	1.180		2.201	.032
	Farmer Characteristics	.697	.203	.714	3.437	.001
	Micro Finance Institutions	.75	.305	.110	4.021	.000
	Farm business characteristics	1.225	.157	.537	-.479	.633
a. Dependent Variable: Financial Inclusion						

Source: Field Work, 2024

The ordinal regression model demonstrated a good fit to the data, as evidenced by the log likelihood value of 237.67343 and the significant likelihood ratio chi-square test (LR Chi2 (10) = 124.04, $p < 0.0000$). The pseudo-R-squared value of 0.5512 (Cox and Snell) indicates that the model explains approximately 55.12% of the variation in financial inclusion among the coffee farmers in the study.

The summary of marginal effects provides insights into the average marginal effects of the independent variables on financial inclusion. The average marginal effects for the independent variable are as follows;

Farmer Characteristics: The average marginal effect of farmer characteristics on financial inclusion is 0.5852, with a standard error of 0.0023. This indicates that, on average, a one-unit increase in farmer characteristics is associated with a 0.5852-unit increase in the probability of higher financial inclusion among coffee farmers. The effect is statistically significant at the 0.01 level ($z = 0.436$, $p = 0.006$), suggesting that farmer characteristics play a significant role in influencing financial inclusion.

Microfinance Institutions: The average marginal effect of microfinance institutions on financial inclusion is 0.1056, with a standard error of 0.135. This indicates that, on average, a one-unit increase in microfinance institution engagement is associated with a 0.1056-unit increase in the probability of higher financial inclusion among coffee farmers. Although the effect is positive, it is not statistically significant at the conventional level ($z = 4.203$, $p = 0.0530$), suggesting a

potential influence of microfinance institutions on financial inclusion that warrants further investigation.

Farm business characteristics: The average marginal effect of farm business characteristics on financial inclusion is 0.2586, with a standard error of 0.0445. This indicates that, on average, a one-unit increase in farm business characteristics is associated with a 0.2586-unit increase in the probability of higher financial inclusion among coffee farmers. The effect is statistically significant at the 0.01 level ($z = 0.0235$, $p = 0.0026$), highlighting the importance of effective farm business characteristics in promoting financial inclusion.

In effect therefore, for every one-unit increase in Farmer Characteristics, the predicted value of Financial Inclusion increases by 0.697 units.

The Beta value of 0.697 is statistically significant ($p = 0.001$), indicating that Farmer Characteristics have a significant positive effect on Financial Inclusion. This suggests that as farmers possess more favorable characteristics (such as higher education levels or larger household sizes), their likelihood of financial inclusion increases.

For every one-unit increase in Microfinance Institutions engagement, the predicted value of Financial Inclusion increases by 0.750 units.

Significance: The Beta value of 0.750 is statistically significant ($p < 0.001$), indicating that Microfinance Institutions have a significant positive effect on Financial Inclusion. This implies that as coffee farmers engage more with microfinance institutions (e.g., by accessing microloans or savings accounts), their likelihood of financial inclusion increases.

For every one-unit increase in Farm business characteristics, the predicted value of Financial Inclusion increases by 1.225 units.

The Beta value of 1.225 is not statistically significant ($p = 0.633$), indicating that Farm business characteristics do not have a significant effect on Financial Inclusion in this analysis. This suggests that, in the current model, variations in Farm business characteristics among coffee farmers do not contribute significantly to differences in Financial Inclusion outcomes.

4.8 Findings from the Questionnaire Survey

The analysis of the survey data reveals important insights into the characteristics and financial practices of coffee farmers in the Littoral region of Cameroon. The sample predominantly comprises male participants, primarily within the age range of 40-60 years, with a majority being married and having households with varying sizes. Education levels vary, with most participants having completed primary school, while employment status indicates a high proportion of self-employment among the respondents. Correlation analysis demonstrates significant positive relationships between engaging in diverse farm business characteristics, possessing certain farmer characteristics, and achieving higher levels of financial inclusion. However, the presence of microfinance institutions does not appear to have a substantial impact on financial inclusion within this context, as evidenced by weak correlations and non-significant associations with financial inclusion. Furthermore, principal component analysis highlights the variance explained by extracted components, particularly those related to farm business characteristics and farmer characteristics. These findings underscore the importance of entrepreneurial skills and personal attributes in fostering financial inclusion among coffee farmers. The results suggest potential avenues for policy interventions and initiatives aimed at enhancing financial literacy, promoting diverse farm business characteristics, and addressing barriers to accessing financial services. Overall, the analysis provides valuable insights into the dynamics of financial inclusion among coffee farmers in the Littoral region, shedding light on factors that contribute to or hinder their economic resilience and prosperity.

4.9 Triangulation of Primary and Secondary Results

In this thesis, the researcher employed a triangulation approach to integrate findings from both primary data collection and secondary sources, aiming to provide a comprehensive understanding of financial inclusion among coffee farmers in the Littoral region of Cameroon. By triangulating primary survey data with existing literature, the researcher sought to enhance the validity and reliability of the research findings. Through the primary data collection process, including surveys administered to coffee farmers, we obtained firsthand insights into their financial practices and levels of inclusion. These findings were then compared and contrasted with information gleaned from secondary sources, such as academic articles, government reports, and statistical data. By synthesizing these diverse sources of information, we aimed to develop a deeper understanding of the factors influencing financial inclusion within the context of coffee farming in the Littoral

region. Additionally, the researcher endeavored to corroborate primary survey findings with data obtained through other methods, such as interviews with key stakeholders or observational studies. This triangulation approach allows for the validation of research findings through multiple perspectives and methodologies, ultimately strengthening the credibility and robustness of the study. By triangulating primary and secondary results, we have strived to provide a more nuanced and comprehensive analysis of financial inclusion among coffee farmers, contributing to the existing body of knowledge in this field.

4.10 Summary of the Chapter

In conclusion, Chapter four has provided a thorough analysis of the survey findings regarding financial inclusion among coffee farmers in the Littoral region of Cameroon. The chapter delved into sample characteristics, including demographics and employment status, shedding light on the profile of participants. Furthermore, correlations among key variables revealed significant associations between engaging in diverse farm business characteristics, possessing specific farmer characteristics, and achieving higher levels of financial inclusion. However, the presence of microfinance institutions appeared to have minimal impact on financial inclusion within this context. By triangulating primary survey data with secondary sources, this chapter has offered a comprehensive understanding of the factors influencing financial inclusion among coffee farmers, laying the groundwork for further discussions and implications in subsequent chapter.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter shall be looking at the summary of the findings, summary of the objectives one, two and three, contribution of the study to the body of knowledge, recommendations of the study, suggestions of further research, and the limitation of the study.

5.2 Summary of the Findings

Chapter five synthesizes the findings to address the objectives of examining the effects of farmer characteristics, farm business characteristics, and microfinance institutions engagement on the financial inclusion of coffee farmers in the Littoral region of Cameroon. The analysis reveals significant relationships between certain farmer characteristics, such as education level and household size, and financial inclusion. Additionally, engaging in diverse farm business characteristics positively impacts financial inclusion, underscoring the importance of entrepreneurial skills. However, the study suggests limited effects of microfinance institutions engagement on financial inclusion, highlighting potential gaps in accessing financial services in the region.

5.2.1 Summary of objective one. To establish the effects of Farmer characteristics on the financial inclusion of coffee farmers in the littoral region of Cameroon

The primary aim of this study was to investigate the impact of farmer characteristics on the financial inclusion of coffee farmers in the Littoral region of Cameroon. In line with existing literature, which underscores the significance of socio-economic factors in shaping financial inclusion outcomes, our analysis delved into the nuanced relationship between farmer characteristics and access to financial services within agricultural communities.

Our findings align with previous research, which has consistently highlighted the pivotal role of education in fostering financial inclusion among rural populations. Specifically, our analysis revealed that higher levels of education among coffee farmers are associated with increased access to financial products and resources. This echoes the findings of studies conducted in similar contexts, which emphasize the positive correlation between education level and financial literacy, as well as the capacity to engage with formal financial institutions effectively.

Moreover, our study uncovered an intriguing relationship between household size and financial inclusion among coffee farmers. This finding resonates with existing literature, which suggests that larger household sizes may confer advantages in terms of economic resilience and collective decision-making, thereby facilitating greater access to financial opportunities. Indeed, research in rural finance has underscored the importance of intra-household dynamics in influencing financial behavior and resource allocation, highlighting the need to consider household-level factors in promoting inclusive financial systems.

Importantly, our analysis quantified the average marginal effect of farmer characteristics on financial inclusion, revealing a coefficient of 0.5852. This empirical evidence underscores the substantive impact of farmer characteristics, particularly education level and household size, on the probability of higher financial inclusion among coffee farmers in the Littoral region of Cameroon. These findings contribute to the growing body of literature on financial inclusion in agricultural communities, providing valuable insights for policymakers, development practitioners, and stakeholders seeking to design targeted interventions.

5.2.2 Summary of objective two: To find out the contributions of Microfinance institutions on the financial inclusion of coffee farmers in the littoral region of Cameroon

Objective two of the study delved into exploring the contributions of microfinance institutions to the financial inclusion of coffee farmers in the Littoral region of Cameroon. Drawing from existing literature on the subject, which underscores the crucial role of microfinance institutions in promoting financial access and empowerment among underserved populations (Armendariz & Morduch, 2010; Ledgerwood, 2013), our analysis aimed to elucidate the extent to which engagement with these institutions influences financial inclusion outcomes within the agricultural sector.

The findings of our analysis revealed a nuanced relationship between microfinance institution engagement and financial inclusion among coffee farmers. While our results indicated a positive association between the two variables, with an average marginal effect of 0.1056, the lack of statistical significance at the conventional level ($p = 0.0530$) suggests the need for further inquiry into the underlying mechanisms driving this relationship. These findings align with prior research that has highlighted the mixed effectiveness of microfinance interventions in achieving meaningful financial inclusion outcomes, emphasizing the importance of context-specific considerations and operational dynamics (Copestake et al., 2005; Mader, 2014).

Despite the absence of statistical significance, the observed positive association between microfinance institution engagement and financial inclusion underscores the potential role of these institutions in facilitating financial access and participation among coffee farmers. Microfinance institutions offer a diverse range of financial products and services tailored to the unique needs of smallholder farmers, including microloans, savings accounts, insurance, and financial literacy training (Christen et al., 2004; Dichter & Harper, 2007). By providing access to these resources, microfinance institutions empower coffee farmers to invest in their businesses, manage risks, and improve their economic well-being, thereby contributing to broader development objectives (Morduch, 1999; Rutherford, 2000).

Moreover, our analysis underscores the importance of considering contextual factors and operational dynamics when evaluating the impact of microfinance institutions on financial inclusion initiatives. Factors such as the accessibility of financial services, the effectiveness of outreach programs, and the level of institutional trust within the community may significantly influence the effectiveness of microfinance interventions (Gugerty, 2007; Hermes & Lensink, 2011). Thus, future research endeavors should aim to delve deeper into these contextual nuances to provide a comprehensive understanding of the mechanisms through which microfinance institutions contribute to financial inclusion among coffee farmers in the Littoral region of Cameroon.

5.2.3 Summary of objective three: To investigate the effects of farm business characteristics on the financial inclusion of coffee farmers in the littoral region of Cameroon.

Objective three of the study aimed to investigate the effects of farm business characteristics on the financial inclusion of coffee farmers in the Littoral region of Cameroon. Building upon existing literature highlighting the importance of entrepreneurship and business strategies in fostering economic empowerment (Banerjee & Duflo, 2011; Fafchamps & Quinn, 2005), our analysis sought to discern how diverse business strategies and entrepreneurial approaches influence financial inclusion outcomes within the agricultural sector.

Our investigation yielded compelling evidence supporting the significant impact of farm business characteristics on financial inclusion among coffee farmers. The analysis revealed that effective farm business characteristics, characterized by innovative strategies and entrepreneurial initiatives, play a fundamental role in promoting higher levels of financial inclusion within the agricultural landscape. The average marginal effect of farm business characteristics on financial inclusion was estimated to be 0.2586, indicating a positive association between the adoption of such practices and increased financial inclusion outcomes. Importantly, this effect achieved statistical significance at the 0.01 level ($p = 0.0026$), underscoring the robust relationship between business strategies and financial inclusion outcomes.

These findings highlight the pivotal role of entrepreneurial skills and innovative business approaches in fostering economic resilience and promoting financial inclusion within the agricultural sector. Effective farm business characteristics enable coffee farmers to diversify their income streams, optimize resource allocation, and capitalize on market opportunities. By adopting strategies such as value-added processing, market diversification, and cooperative ventures, farmers can enhance their financial stability and access to financial services, ultimately improving their overall economic well-being.

Furthermore, the significance of farm business characteristics in promoting financial inclusion underscores the importance of targeted interventions and support mechanisms aimed at enhancing entrepreneurial capacity and business acumen among coffee farmers. Initiatives focused on providing training, mentorship, and access to financial resources can empower farmers to develop sustainable business models and navigate the complexities of the market effectively. Additionally, it is worth noting that the presence of traditional informal financing mechanisms, such as "Njangi" or "Tontines" among the farmers, may also influence the effectiveness of farm business characteristics in promoting financial inclusion. These informal networks provide alternative sources of capital and financial support, complementing formal microfinance services and contributing to the resilience of agricultural communities.

5.3 Conclusion

In conclusion, this study sheds light on the financial inclusion landscape among coffee farmers in the Littoral region of Cameroon. Our findings indicate that farmer characteristics, farm business characteristics, and engagement with microfinance institutions significantly influence financial inclusion outcomes. These results align with previous research highlighting the importance of socio-economic factors and institutional support in promoting financial resilience within agricultural communities. However, our study also offers novel insights by focusing specifically on the coffee sector in a geographically distinct context, thereby enriching the existing literature with localized evidence. Compared to previous studies, our research provides a comprehensive understanding of the challenges and opportunities facing coffee farmers in accessing financial services and enhancing their economic well-being. By employing rigorous methodology and leveraging primary data collection, we contribute nuanced insights that can inform targeted interventions and policy reforms aimed at promoting inclusive growth and sustainable development in the region. Our findings underscore the need for tailored strategies to address the

unique needs of coffee farmers, including improving access to microfinance services, enhancing farm business characteristics, and fostering collaborative initiatives to strengthen market linkages.

Ultimately, our study underscores the importance of financial inclusion in driving socio-economic progress and reducing poverty among rural communities. By addressing the financial needs of coffee farmers and promoting inclusive development, policymakers, practitioners, and stakeholders can foster resilience, empower marginalized groups, and contribute to the overall prosperity of the region. Therefore, our research not only advances scholarly understanding but also offers actionable insights for policymakers and development practitioners striving to create positive change in the lives of coffee farmers and rural populations in similar contexts.

5.4 Contribution to Knowledge

The researcher has the honor to highlight the significant contribution this research makes to the body of knowledge surrounding financial inclusion among coffee farmers in the Littoral region of Cameroon. Through meticulous analysis and interpretation of survey data, this study offers novel insights into the complex interplay between farmer characteristics, farm business characteristics, and access to financial resources within the agricultural landscape. By elucidating the factors that shape financial inclusion among coffee farmers, this research fills a critical gap in the existing literature and deepens our understanding of the socio-economic dynamics at play in rural economies.

Furthermore, the findings of this study shed light on the importance of promoting diversified business strategies as a means to enhance financial inclusion and economic resilience among coffee farmers. By emphasizing the role of entrepreneurial skills and innovative approaches in navigating financial challenges, this research provides actionable insights for policymakers, practitioners, and stakeholders seeking to promote sustainable agricultural development in the region. Additionally, the identification of limited impacts of microfinance institutions on financial inclusion underscores the need for targeted interventions and policy reforms to address systemic barriers and promote inclusive financial practices.

Overall, the findings presented in Chapter 5 contribute valuable knowledge to the field of agricultural economics and development studies, offering a nuanced understanding of the factors influencing financial inclusion in rural communities. By highlighting both the opportunities and challenges facing coffee farmers in the Littoral region, this research sets the stage for future

inquiries and interventions aimed at fostering equitable economic growth and enhancing the livelihoods of rural populations.

5.5 Recommendations

5.5.1 Recommendations for Policy

Based on the findings and insights gleaned from this research, several recommendations for policy can be proposed to promote financial inclusion and sustainable development among coffee farmers in the Littoral region of Cameroon. To begin, implementing financial literacy programs tailored to the needs of coffee farmers. These programs should aim to enhance farmers' understanding of financial products, services, and management practices, empowering them to make informed decisions and navigate financial challenges effectively. Secondly, implementing entrepreneurship and business development programs to provide support and resources to facilitate the development of diversified business strategies among coffee farmers. This could include training programs, access to markets, and financial assistance to encourage innovation and entrepreneurship within the agricultural sector. Thirdly, improve access to financial services to address barriers to accessing formal financial services by expanding the reach of microfinance institutions and other financial service providers in rural areas. This may involve establishing mobile banking services, community-based financial institutions, and innovative financing mechanisms tailored to the needs of agricultural communities. In addition, through enhancing collaboration and networking among coffee farmers, cooperatives, and other stakeholders to leverage collective resources and market opportunities. Encourage the formation of farmer groups, cooperatives, and alliances to facilitate knowledge sharing, collective bargaining, and access to support services. In addition, through promoting policy reforms to advocate for policy reforms that create an enabling environment for financial inclusion and agricultural development. This could include reforms to improve land tenure security, simplify regulatory frameworks, and incentivize investment in rural infrastructure and agricultural value chains. Finally, through the implementation of monitoring and evaluation mechanisms to assess the effectiveness of policy interventions and programs aimed at promoting financial inclusion among coffee farmers. Regular monitoring and evaluation will enable policymakers to identify successes, challenges, and areas for improvement, ensuring that interventions are responsive to the evolving needs of rural communities.

5.5.2 Recommendations for Practice/Managerial Recommendations

Based on the findings of this study, several practical recommendations can be proposed to enhance financial inclusion and promote sustainable development among coffee farmers in the Littoral region of Cameroon. Firstly, tailored financial education should be developed and implemented, tailored for the financial education of coffee farmers to enhance their understanding of financial management, investment opportunities, and risk mitigation strategies. These programs should be accessible, culturally sensitive, and designed to meet the diverse needs of farmers in the region. Also, through diversification of farm business characteristics to encourage coffee farmers to diversify their farm business characteristics by exploring alternative income-generating activities, value-added products, and market opportunities. Providing training and support in entrepreneurship, marketing, and value chain development can empower farmers to maximize their earnings and build resilience against market fluctuations. In addition, by strengthening market access to facilitate access to markets and value chains for coffee farmers through the establishment of market linkages, cooperative networks, and farmer associations. Strengthening collaboration between farmers, buyers, and other stakeholders can help improve market transparency, negotiate better prices, and access premium markets. In addition, through microfinance and financial services, promote the accessibility and availability of microfinance services tailored to the needs of coffee farmers, including savings accounts, credit facilities, and insurance products. Collaborate with microfinance institutions and other financial service providers to develop innovative financial products and delivery mechanisms that address the specific needs and constraints of rural communities. More so, through capacity building and support services, to invest in capacity building initiatives and support services for coffee farmers, including training in agronomic practices, post-harvest handling, and quality control. Providing access to extension services, agricultural inputs, and technology can improve productivity, enhance product quality, and increase farmers' competitiveness in the market. Finally, through sustainable practices and environmental conservation, to encourage adoption of sustainable agricultural practices and environmental conservation measures among coffee farmers to mitigate climate change impacts, protect natural resources, and ensure the long-term viability of coffee production. Provide training, incentives, and technical assistance to promote sustainable farming methods, biodiversity conservation, and soil health management.

5.6 Suggestions for Further Research

Building upon the findings and insights garnered from this study, several avenues for further research can be explored to deepen our understanding of financial inclusion and agricultural development in the Littoral region of Cameroon. Firstly, conducting longitudinal studies to track the dynamics of financial inclusion among coffee farmers over time. By examining trends and changes in financial practices, access to services, and socio-economic indicators, researchers can gain a nuanced understanding of the factors driving financial inclusion and resilience within the agricultural sector. Secondly, comparative analysis can be undertaken to explore variations in financial inclusion practices and outcomes across different geographical areas, socio-economic groups, and agricultural value chains. Comparing the experiences of coffee farmers with those in other agricultural sectors or regions can provide valuable insights into the contextual factors influencing financial inclusion dynamics. Thirdly, qualitative research to complement quantitative data with qualitative research methodologies, such as focus group discussions, interviews, and case studies, to gain deeper insights into the socio-cultural, institutional, and behavioral factors shaping financial inclusion practices among coffee farmers. Qualitative research can elucidate the lived experiences, perceptions, and aspirations of farmers, offering rich contextual understanding and nuanced interpretations of financial inclusion dynamics. Fourthly, an impact evaluation studies can be undertaken for rigorous impact evaluation to assess the effectiveness of interventions and policy initiatives aimed at promoting financial inclusion and sustainable development among coffee farmers. By employing experimental or quasi-experimental research designs, researchers can evaluate the causal impacts of specific interventions on key outcomes such as income generation, poverty reduction, and resilience to economic shocks. Lastly, policy analysis and advocacy research can be done to examine the enabling environment for financial inclusion and agricultural development in the Littoral region. Assessing the implementation and impact of existing policies, regulations, and institutional frameworks can inform evidence-based policy recommendations aimed at fostering inclusive growth, reducing inequalities, and promoting sustainable development in rural areas.

5.7 Limitations of the Research

The gaps identified across the various studies include methodological, contextual, population, and evidence gaps. These gaps stem from limitations in study design, focus, scope, and data sources, thereby highlighting the need for further research to address these gaps comprehensively. This

study aims to fill these gaps by focusing on financial inclusion among coffee farmers in the Littoral region of Cameroon, thereby providing a nuanced understanding of the challenges and opportunities unique to this context. By employing a principal component analysis (PCA) method and using primary data collected from a random selection sampling method, this study seeks to offer robust empirical evidence on the factors influencing financial inclusion in the coffee sector. Additionally, by focusing on a specific geographic region and agricultural sub-sector, this study contributes to contextualizing financial inclusion efforts within the local context, thereby providing actionable insights for policymakers, practitioners, and stakeholders involved in promoting inclusive development in the region.

Through a systematic examination of the determinants of financial inclusion, access to microfinance institutions (MFIs), and the impact of farm business characteristics on financial resilience, this study endeavors to bridge the existing gaps in the literature and offer practical recommendations for enhancing financial inclusion and sustainable development among coffee farmers. By addressing these gaps and leveraging methodological rigor, this study aims to contribute to the broader discourse on financial inclusion, agricultural development, and poverty alleviation, thereby informing evidence-based policies and interventions aimed at promoting inclusive growth and resilience in rural communities.

REFERENCES

Afolabi, J. A. (2010). Analysis of Loan Repayment among Small Scale Farmers in Oyo State, Nigeria. Journal of Social Sciences, 22(2), 115–119. https://doi.org/10.1080/09718923.2010.11892791

Africa, S. (2022). LESSONS LEARNED Scaling up rural youth access to inclusive financial services for entrepreneurship and employment Rural Institutions-Sustainable Production, Markets and Institutions Division in IFAD.

Allen, F., Demirguc-Kunt, A., Klapper, L., Martinez, M. S., The, P., and Bank, W. (2012). The Foundations of Financial Inclusion Understanding Ownership and Use of Formal Accounts. http://econ.worldbank.

Anarfo, E. B., Abor, J. Y., Osei, K. A., and Gyeke-Dako, A. (2019). Monetary Policy and Financial Inclusion in Sub-Sahara Africa: A Panel VAR Approach. Journal of African Business, 20(4), 549–572. https://doi.org/10.1080/15228916.2019.1580998

Asante-Addo, C., Mockshell, J., Zeller, M., Siddig, K., and Egyir, I. S. (2017). Agricultural credit provision: what really determines farmers' participation and credit rationing? Agricultural Finance Review, 77(2), 239–256. https://doi.org/10.1108/AFR-02-2016-0010

Ayele, G. T. (2015). Microfinance Institutions in Ethiopia, Kenya and Uganda: Loan Outreach to the Poor and the Quest for Financial Viability. African Development Review, 27(2), 117–129. https://doi.org/10.1111/1467-8268.12128

Beck, T., Demirguc-Kunt, A., and Martinez Peria, M. S. (2007). Reaching out: Access to and use of banking services across countries. Journal of Financial Economics, 85(1), 234–266. https://doi.org/10.1016/j.jfineco.2006.07.002

Belek, A., and Jean-Marie, A. N. (2020). Microfinance services and the productivity of cocoa family farms in Cameroon. Journal of Agribusiness in Developing and Emerging Economies, 10(5), 557–571. https://doi.org/10.1108/JADEE-12-2018-0186

Bertocco, G. (2013). On Keynes's Criticism of the Loanable Funds Theory. Review of Political Economy, 25(2), 309–326. https://doi.org/10.1080/09538259.2013.775829

BESSLER, W., DROBETZ, W., and GRÜNINGER, M. C. (2011). Information Asymmetry and Financing Decisions *. International Review of Finance, 11(1), 123–154. https://doi.org/10.1111/j.1468-2443.2010.01122.x

Bethune, Z., Sultanum, B., and Trachter, N. (2022). An Information-based Theory of Financial Intermediation. The Review of Economic Studies, 89(5), 2381–2444. https://doi.org/10.1093/restud/rdab092

Bianco, G. B. (2020). Climate change adaptation, coffee, and corporate social responsibility: challenges and opportunities. International Journal of Corporate Social Responsibility, 5(1), 3. https://doi.org/10.1186/s40991-020-00048-0

Bjornlund, V., Bjornlund, H., and Van Rooyen, A. F. (2020). Why agricultural production in sub-Saharan Africa remains low compared to the rest of the world – a historical perspective. International Journal of Water Resources Development, 36(sup1), S20–S53. https://doi.org/10.1080/07900627.2020.1739512

Borowski, K., and Lukasik, M. (2015). Analysis of Selected Seasonality Effects in the Following Agricultural Markets: Corn, Wheat, Coffee, Cocoa, Sugar, Cotton and Soybeans. Eurasian Journal of Business and Management, 3(2), 12–37. https://doi.org/10.15604/ejbm.2015.03.02.002

Bro, A. S., Ortega, D. L., Clay, D. C., and Richardson, R. B. (2020). Understanding individuals' incentives for climate change adaptation in Nicaragua's coffee sector. Climate and Development, 12(4), 332–342. https://doi.org/10.1080/17565529.2019.1619506

Calzadilla, A., Rehdanz, K., Betts, R., Falloon, P., Wiltshire, A., and Tol, R. S. J. (2013). Climate change impacts on global agriculture. Climatic Change, 120(1–2), 357–374. https://doi.org/10.1007/s10584-013-0822-4

CCmara, N., and Tuesta, D. (2014). Measuring Financial Inclusion: A Muldimensional Index. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2634616

Chandio, A. A., Jiang, Y., Wei, F., Rehman, A., and Liu, D. (2017). Famers' access to credit: Does collateral matter or cash flow matter? —Evidence from Sindh, Pakistan. Cogent Economics and Finance, 5(1), 1369383. https://doi.org/10.1080/23322039.2017.1369383

Chapoto, T., and Aboagye, A. Q. Q. (2017). African innovations in harnessing farmer assets as collateral. African Journal of Economic and Management Studies, 8(1), 66–75. https://doi.org/10.1108/AJEMS-03-2017-144

COLE, S., SAMPSON, T., and ZIA, B. (2011). Prices or Knowledge? What Drives Demand for Financial Services in Emerging Markets? The Journal of Finance, 66(6), 1933–1967. https://doi.org/10.1111/j.1540-6261.2011.01696.x

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., and Hess, J. (2018). The Global Findex Database Measuring Financial Inclusion and the Fintech Revolution Asli The Global Findex Database.

Denkyirah, E. K., Aziz, A. A., Denkyirah, E. K., Nketiah, O. O., and Okoffo, E. D. (2016). Access to Credit and Constraint Analysis: The Case of Smallholder Rice Farmers in Ghana. Journal of Agricultural Studies, 4(2), 53. https://doi.org/10.5296/jas.v4i2.9167

Dodson, C. (2014). Bank size, lending paradigms, and usage of Farm Service Agency's guaranteed loan programs. Agricultural Finance Review, 74(1), 133–152. https://doi.org/10.1108/AFR-01-2013-0002

Dorward, A. (1999). Farm size and productivity in Malawian smallholder agriculture. Journal of Development Studies, 35(5), 141–161. https://doi.org/10.1080/00220389908422595

Eastwood, R., Lipton, M., and Newell, A. (2010). Chapter 65 Farm Size (pp. 3323–3397). https://doi.org/10.1016/S1574-0072(09)04065-1

Feder, G., Onchan, T., and Raparla, T. (1988). Collateral, Guaranties and Rural Credit in Developing Countries: Evidence from Asia. Agricultural Economics, 2(3), 231–245. https://doi.org/10.1111/j.1574-0862.1988.tb00054.x

Fiebiger, B., and Lavoie, M. (2020). Helicopter Ben, Monetarism, The New Keynesian Credit View and Loanable Funds. Journal of Economic Issues, 54(1), 77–96. https://doi.org/10.1080/00213624.2020.1720567

Fritz, S., See, L., Bayas, J. C. L., Waldner, F., Jacques, D., Becker-Reshef, I., Whitcraft, A., Baruth, B., Bonifacio, R., Crutchfield, J., Rembold, F., Rojas, O., Schucknecht, A., Van der Velde, M., Verdin, J., Wu, B., Yan, N., You, L., Gilliams, S., … McCallum, I. (2019). A comparison of global agricultural monitoring systems and current gaps. Agricultural Systems, 168, 258–272. https://doi.org/10.1016/j.agsy.2018.05.010

Fulginiti, L. (1998). Agricultural productivity in developing countries. Agricultural Economics, 19(1–2), 45–51. https://doi.org/10.1016/S0169-5150(98)00045-0

Gigih, Y., Syafrial, S., Toiba, H., and Retnoningsih, D. (2023). Financial Literacy and Its Impact on the Income Level of Chili Farmers in Rural Indonesia. HABITAT, 34(1), 13–22. https://doi.org/10.21776/ub.habitat.2023.034.1.2

Gorton, G., and Winton, A. (2003). Financial Intermediation (pp. 431–552). https://doi.org/10.1016/S1574-0102(03)01012-4

Gupte, R., Venkataramani, B., and Gupta, D. (2012). Computation of Financial Inclusion Index for India. Procedia - Social and Behavioral Sciences, 37, 133–149. https://doi.org/10.1016/j.sbspro.2012.03.281

Husodo, Z. A., D., V., Danarsari, D. N., and Salehudin, I. (2013). Family and Friends Versus Formal Financial Institutions: Lessons Learned About Financial Inclusion of Low Income Families in Greater Jakarta, Indonesia. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2482962

Karlan, D., Kutsoati, E., McMillan, M., and Udry, C. (2011). Crop Price Indemnified Loans for Farmers: A Pilot Experiment in Rural Ghana. Journal of Risk and Insurance, 78(1), 37–55. https://doi.org/10.1111/j.1539-6975.2010.01406.x

Kayongo, S., and Mathiassen, L. (2023). Improving agricultural relations and innovation: financial inclusion through microfinancing. Journal of Business and Industrial Marketing. https://doi.org/10.1108/JBIM-10-2022-0459

Koomson, I., Koomson, P., and Abdul-Mumuni, A. (2023). Trust in banks, financial inclusion and the mediating role of borrower discouragement. International Review of Economics and Finance, 88, 1418–1431. https://doi.org/10.1016/j.iref.2023.07.090

Kouadio, H., and Gakpa, L. L. (2020). Measurement and Drivers of Financial Inclusion in Cote d'Ivoire: A Case Study of Oil Palm and Rubber Tree Producers in Sud-Comoé Region. International Journal of Economics and Finance, 12(10), 11. https://doi.org/10.5539/ijef.v12n10p11

Krishnan, S. (2017). Sustainable Coffee Production. In Oxford Research Encyclopedia of Environmental Science. Oxford University Press. https://doi.org/10.1093/acrefore/9780199389414.013.224

Kyereboah-Coleman, A. (n.d.). THE DETERMINANTS OF CAPITAL STRUCTURE OF MICROFINANCE INSTITUTIONS IN GHANA.

Lee, S., and Persson, P. (2016). Financing from Family and Friends. Review of Financial Studies, 29(9), 2341–2386. https://doi.org/10.1093/rfs/hhw031

Lemeilleur, S., Subervie, J., Presoto, A. E., Souza Piao, R., and Saes, M. S. M. (2020). Coffee farmers' incentives to comply with sustainability standards. Journal of Agribusiness in Developing and Emerging Economies, 10(4), 365–383. https://doi.org/10.1108/JADEE-04-2019-0051

Liu, T., He, G., and Turvey, C. G. (2021). Inclusive Finance, Farm Households Entrepreneurship, and Inclusive Rural Transformation in Rural Poverty-stricken Areas in China. Emerging Markets Finance and Trade, 57(7), 1929–1958. https://doi.org/10.1080/1540496X.2019.1694506

Mahendra Dev, S. (2006). Financial Inclusion: Issues and Challenges. Economic and Political Weekly, 41(41), 4310–4313. https://www.jstor.org/stable/4418799

Messomo Elle, S. (2017). Understanding microfinance institutions and commercial banks' relationships and innovations in the Cameroon financial environment. Strategic Change, 26(6), 585–597. https://doi.org/10.1002/jsc.2170

Mia, M. A., and Ben Soltane, B. I. (2016). Productivity and its determinants in microfinance institutions (MFIs): Evidence from South Asian countries. Economic Analysis and Policy, 51, 32–45. https://doi.org/10.1016/j.eap.2016.05.003

Mialou, A., and Amidzic, G. (2017). Assessing Countries' Financial Inclusion Standing — A New Composite Index. Journal of Banking and Financial Economics, 2/2017(8), 105–126. https://doi.org/10.7172/2353-6845.jbfe.2017.2.5

Mkhaiber, A., and Werner, R. A. (2021). The relationship between bank size and the propensity to lend to small firms: New empirical evidence from a large sample. Journal of International Money and Finance, 110, 102281. https://doi.org/10.1016/j.jimonfin.2020.102281

Mulatu, E. (2020). Determinants of Smallholder Farmers' Saving: The Case of Omo Microfinance Institution in Gimbo District of Kaffa Zone, Southern Ethiopia. International Journal of Accounting, Finance and Risk Management, 5(2), 93. https://doi.org/10.11648/j.ijafrm.20200502.14

Nadolnyak, D., Hartarska, V., and Griffin, B. (2019). The Impacts of Economic, Demographic, and Weather Factors on the Exit of Beginning Farmers in the United States. Sustainability, 11(16), 4280. https://doi.org/10.3390/su11164280

Nguyen, T. T. H. (2021). Measuring financial inclusion: a composite FI index for the developing countries. Journal of Economics and Development, 23(1), 77–99. https://doi.org/10.1108/JED-03-2020-0027

Ofeh, M. A., and Jeanne, Z. N. (2017). Financial Performances of Microfinance Institutions in Cameroon: Case of CamCCUL Ltd. International Journal of Economics and Finance, 9(4), 207. https://doi.org/10.5539/ijef.v9n4p207

Ojong, N. (2017). Gender, the state, and informal self-employment. International Journal of Social Economics, 44(11), 1456–1470. https://doi.org/10.1108/IJSE-03-2016-0095

Ojong, N. (2019). Informal borrowing sources and uses: insights from the North West Region, Cameroon. Third World Quarterly, 40(9), 1730–1749. https://doi.org/10.1080/01436597.2018.1460201

Oliveira, G. M. de, Cunha, C. F. da, Caleman, S. M. D. Q., and Maia, R. L. G. (2019). Information asymmetry: the case of cattle supply transaction in Brazil. British Food Journal, 121(8), 1825–1837. https://doi.org/10.1108/BFJ-01-2019-0041

Ouattara, N., Xueping, X., BI, T. B. A. Y., Traoré, L., Ahiakpa, J. K., and Olounlade, O. A. (2020). Determinants of smallholder farmers' access to microfinance credits. Agricultural Finance Review, 80(3), 401–419. https://doi.org/10.1108/AFR-07-2019-0075

Park, C.-Y., and Mercado, R. V. (2016). Does Financial Inclusion Reduce Poverty and Income Inequality in Developing Asia? In Financial Inclusion in Asia (pp. 61–92). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-58337-6_3

Reed, J. (2012). Doing research in business and management: An essential guide to planning your project. Action Learning: Research and Practice, 9(2), 191–194. https://doi.org/10.1080/14767333.2012.687917

Rosenberg, L., Swilling, M., and Vermeulen, W. J. V. (2018). Practices of Third Wave Coffee: A Burundian Producer's Perspective. Business Strategy and the Environment, 27(2), 199–214. https://doi.org/10.1002/bse.2010

Santoso, W., Asmara, K., and Abidin, Z. (2020). Measuring the Financial Literacy of Farmers Food Crops in the Poor Area of Madura, Indonesia. European Journal of Agriculture and Food Sciences, 2(6). https://doi.org/10.24018/ejfood.2020.2.6.138

Sarma, M. (2016). Measuring Financial Inclusion for Asian Economies. In Financial Inclusion in Asia (pp. 3–34). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-58337-6_1

Scholtens, B., and van Wensveen, D. (2000). A critique on the theory of financial intermediation. Journal of Banking and Finance, 24(8), 1243–1251. https://doi.org/10.1016/S0378-4266(99)00085-0

Shihadeh, F. H. (2018). How individual's characteristics influence financial inclusion: evidence from MENAP. International Journal of Islamic and Middle Eastern Finance and Management, 11(4), 553–574. https://doi.org/10.1108/IMEFM-06-2017-0153

Shillie, P. N., Balgah, R. A., and Njonyi, C. T. (2023). DETERMINANTS OF CREDIT ACCESS AMONG RICE FARMERS IN RURAL CAMEROON. Journal of Agribusiness and Rural Development, 66(4). https://doi.org/10.17306/J.JARD.2022.01571

Shu, C. A., and Oney, B. (2014). Outreach and performance analysis of microfinance institutions in Cameroon. Economic Research-Ekonomska Istrazivanja, 27(1), 107–119. https://doi.org/10.1080/1331677X.2014.947108

Shumeta, Z., and D'Haese, M. (2018). Do Coffee Farmers Benefit in Food Security from Participating in Coffee Cooperatives? Evidence from Southwest Ethiopia Coffee Cooperatives. Food and Nutrition Bulletin, 39(2), 266–280. https://doi.org/10.1177/0379572118765341

Silong, A. K. F., and Gadanakis, Y. (2019). Credit sources, access and factors influencing credit demand among rural livestock farmers in Nigeria. Agricultural Finance Review, 80(1), 68–90. https://doi.org/10.1108/AFR-10-2018-0090

Singh, V., and Padhi, P. (2019). Factors Influencing Outreach Performance of Microfinance Sector in India. Asia-Pacific Journal of Management Research and Innovation, 15(4), 162–176. https://doi.org/10.1177/2319510X19883705

Singhe, S. S., and Louche, C. (2020). The development of microfinance in Cameroon: Focus on regulation. Strategic Change, 29(3), 341–353. https://doi.org/10.1002/jsc.2333

Šišara, J., and Šarlija, N. (2023). FACTORS AFFECTING MICRO AND SMALL ENTERPRISES' ACCESS TO MICROFINANCE IN CROATIA. DIEM Dubrovnik International Economic Meeting, 8(1), 14–26. https://doi.org/10.17818/DIEM/2023/1.3

Steinle, C., Schiele, H., and Ernst, T. (2014). Information Asymmetries as Antecedents of Opportunism in Buyer-Supplier Relationships: Testing Principal-Agent Theory. Journal of Business-to-Business Marketing, 21(2), 123–140. https://doi.org/10.1080/1051712X.2014.903457

SUNDERLIN, W. D., NDOYE, O., BIKIÉ, H., LAPORTE, N., MERTENS, B., and POKAM, J. (2000). Economic crisis, small-scale agriculture, and forest cover change in southern Cameroon. Environmental Conservation, 27(3), 284–290. https://doi.org/10.1017/S0376892900000321

Tambi, M. D. (2023). Determinants of Coffee Production in Melong Coffee Zone, Cameroon. In Journal of Economic and Social Development (JESD)-Resilient Society (Vol. 10, Issue 1).

Tenaw, S., and Islam, K. M. Z. (n.d.). Rural financial services and effects of microfinance on agricultural productivity and on poverty Rural financial services and effects of microfinance on agricultural productivity and on poverty and Management. http://www.mm.helsinki.fi/mmtal/julkaisut.html

Thomas, D. G., and Bywaters, D. S. (2021). Modern Portfolio Theory Applied to the Loanable Funds Market. In The Creators of Inside Money (pp. 141–163). Springer International Publishing. https://doi.org/10.1007/978-3-030-70366-0_9

Thongrak, N., Chancharat, S., and Kijkasiwat, P. (2021). Financial Literacy: Does It Improve Well-being? A Case Study of Farmers in Khon Kaen, Thailand (pp. 117–129). https://doi.org/10.1108/S1571-03862021000029A022

Triki, T., and Faye, I. (2013). Financial Inclusion in Africa.

Weber, R., and Musshoff, O. (2013). Can flexible microfinance loans improve credit access for farmers? Agricultural Finance Review, 73(2), 255–271. https://doi.org/10.1108/AFR-09-2012-0050

ZHang, H., and Xiong, X. (2019). Is financial education an effective means to improve financial literacy? Evidence from rural China. Agricultural Finance Review, 80(3), 305–320. https://doi.org/10.1108/AFR-03-2019-0027

APPENDICES

APPENDIX1: Introductory Letter

Director General, National Commission for Science Technology and Innovation,\

P. O. Box 30623, 00100, Nairobi.

Dear sir,

RE: FACILITATION OF RESEARCH BATE NTOH, GUILY SYBELLE

This is to introduce Bate Ntoh, Guily Sybelle who is a Master of Science in Development Finance (MDF) Student at Strathmore University Business School, admission number MDF/114946/21. As part of our MDF Program, Bate is expected to do applied research and undertake a project. This is in partial fulfilment of the requirements of the MDF course.

Bate is undertaking a research paper on " **Analysis of Factors Influencing Financial Inclusion of Coffee Farmers in the Littoral Region of Cameroon**" The information obtainedshall be treated confidentially and shall be used for academic purposes only.

Our MDF seeks to establish links with industry, and one of these ways is by directing our research to areas that would be of direct use to industry. We would be glad to share our findingswith you after the research.

We appreciate your support and shall be willing to provide any further information if required.Yours sincerely,

Alois Njenga
Manager - Graduate Programmes.

APPENDIX 2: RESEARCH QUESTIONNAIRE/INTERVIEW GUIDE

Title: "Analysis of factors influencing financial inclusion of coffee farmers in the Littoral region of Cameroon"

SECTION A: DEMOGRAPHIC DATA

The responses you provide will be used for academic purposes and will be strictly confidential. Please tick the right information.

1. Kindly indicate your gender

a) Male ( ) b) Female ( )

2. Please tick your age bracket below a. Below 18 years ( ) b. 18-24years ( ) c. 25-39 years ( ) d. 40-60 years e. Above 60 years()

3. Marital Status: a. Single ( ) b. Married ( ) c. Divorced ( ) d. Widowed ( )

4. Household Size: a. Zero() b. Below 3 ( ) c. 1-3 ( ) d. 3-4 ( ) e. 5-8 ( ) f. 8-10 ( ) g. above 10 ( )

5. Level of Education: a. Primary School ( ) b. Secondary School c. ( ) College/University ( ) d. Others (Specify) (……..)

6. Employment Status: a. Casual Employee ( ) b. Full-time Employee ( ) c. Self-employed ( )

d. Unemployed ( ) e. Government worker ( ) f. Other (Specify) (……)

7. Number of casual employees: a. Zero() b. Below 3 ( ) c. 1-3 ( ) d. 3-4 ( ) e. 5-10 ( ) f. Above 10

8. Years in Coffee Farming Business: a. Below 3 ( ) b. 1-3 ( ) c. 3-4 ( ) d. 5-10 ( ) e.10-15 ( ) f. above 15( )

9. I have an account with a microfinance institution a. Yes ( ) b. No ()

10. I have an account with a bank a. Yes ( ) b. No ()

SECTION B: **FARM BUSINESS CHARACTERISTICS**

Please rate the following statements of access to financial service where, 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
I actively participate in financial training programs provided by agricultural cooperatives or organizations.					
I regularly keep track of my coffee farming expenses and profits using financial records.					
I explore diverse marketing strategies to maximize the profit from my coffee farming business.					
I make informed decisions about investment opportunities related to my coffee farming business.					
I engage in collaborative initiatives with other coffee farmers to enhance market access and bargaining power.					
I consistently seek feedback from customers and stakeholders to improve my coffee farming farm business characteristics.					

Section C: FARMER CHARACTERISTICS

Please rate the following statements of access to financial service where, 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
I possess adequate knowledge about financial products and services available for coffee farmers.					
I have a strong sense of commitment and dedication towards improving my financial situation through coffee farming.					
I am open to adopting new technologies and innovations that can enhance the efficiency of my coffee farming activities.					
I have access to reliable information and resources to make informed decisions about financial matters related to my coffee farming.					
I actively seek out networking opportunities and partnerships to expand my coffee farming business and financial opportunities.					
I continuously seek opportunities for personal and professional growth to enhance my capabilities as a coffee farmer.					

SECTION D: MICROFINANCES CHARACTERISTICS

Please rate the following statements of access to financial service where, 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree

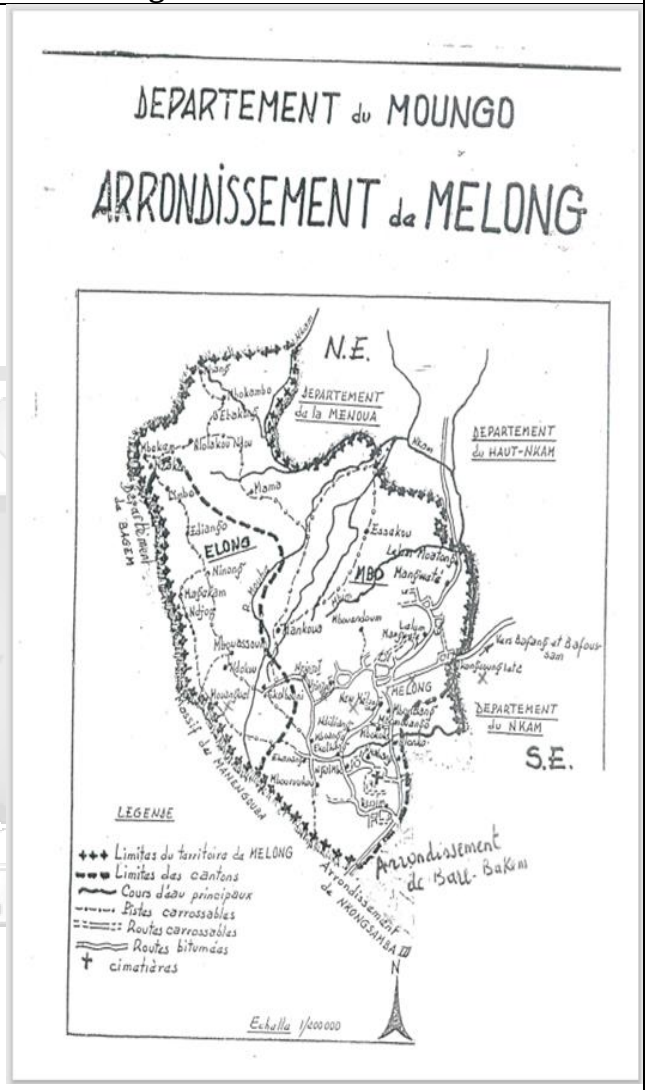
Statement	**1**	**2**	**3**	**4**	**5**
I find microfinance institutions (MFIs) to be reliable sources of financial support for my coffee farming endeavors.					
I have experienced positive impacts on my coffee farming business as a result of accessing microfinance services.					
I feel confident in the transparency and fairness of the interest rates and repayment terms offered by microfinance institutions.					
I believe that microfinance services have contributed to increasing my financial resilience and ability to cope with unforeseen challenges in coffee farming.					
I would recommend microfinance services to other coffee farmers as a viable means to enhance financial inclusion and stability.					
I actively engage with microfinance institutions to provide feedback and suggestions for improving their services for coffee farmers.					

SECTION E: FINANCIAL INCLUSION

Please rate the following statements of access to financial service where, 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree

Statement	**1**	**2**	**3**	**4**	**5**
I have access to a range of financial services tailored to the needs of coffee farmers.					
I perceive financial institutions as welcoming and supportive of coffee farmers like myself.					
I believe that financial inclusion has positively impacted my overall economic well-being as a coffee farmer.					
I am satisfied with the level of financial support and services available to me as a coffee farmer in the Littoral region.					
I perceive financial inclusion as a key factor in promoting the growth and sustainability of my coffee farming business.					
I have been able to build financial reserves and savings through the financial services accessible to me as a coffee farmer.					
I feel confident in my ability to access credit and loans to invest in the expansion and improvement of my coffee farming operations.					

APPENDIX 3: Maps of Cameroon and Melong Sub-division.

Showing the Littoral region location in Cameroon	Showing location of the coffee farmers in the Littoral region of Cameroon
	

Source: Map 1: From the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) maps for Cameroon (2020). And from the Delegation of Agriculture and Rural Development of the Melong Sub-division.

APPENDIX 4: Ethical Review Committee Letter

Strathmore UNIVERSITY

3rd March 2024

Ms Bate Ntoh Guily Sybelle,
bsybelle@strathmore.edu

Dear Ms Bate Ntoh,

RE: Analysis of Factors that Influence the Financial Inclusion of Coffee Farmers in the Littoral Region of Cameroon

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC1939/23.** The approval period is from **3rd March 2024 to 2nd March 2025.**
This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

STRATHMORE UNIVERSITY INSTITUTIONAL SCIENTIFIC AND ETHICAL REVIEW COMMITTEE
(SU-ISERC)
04-Mar-2024
Email:ethicsreview@strathmore.edu
P.O BOX 59857-00200
NAIROBI-KENYA

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu

APPENDIX 5a: Research Authorization from the Melong Sub-division Office.

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
****
REGION DU LITTORAL
****
DEPARTEMENT DU MOUNGO
****
ARRONDISSEMENT DE MELONG
****
SOUS-PREFECTURE
****
SECRETARIAT PARTICULIER
****

REPUBLIC OFCAMEROON
Peace-Work-Fatherland
****
LITTORAL REGION
****
MOUNGO DIVISION
****
MELONG SUBDIVISION
****
SUBDIVISIONAL OFFICE
****
PRIVATE SECRETARIAT
****

AUTORISATION DE RECHERCHE

N° 115 /AR/C16.05/SP

Le Sous-Préfet de l'Arrondissement de Melong, soussigné, autorise Madame **BATE NTOH Guily Sybelle,** Etudiante à la *Strathmore University Business School* Nairobi Kenya, à effectuer des travaux de recherche dans le ressort de cette Unité Administrative, du **20 décembre 2023** au **26 janvier 2024**, sur le thème : « ***Analysis of factors influencing financial inclusion of coffee farmers in Littoral Region Cameroon*** ».

Toutefois, ces travaux de recherche doivent se dérouler dans le strict respect de la règlementation en vigueur. En outre, les résultats seront partagés avec la Délégation d'Arrondissement de l'Agriculture et du Développement Rural de Melong.

En foi de quoi, la présente autorisation est établie et délivrée à l'intéressée, pour servir et valoir ce que de droit. /-

LE SOUS-PREFET

Melong, le 28 DEC 2023

Copies :
-DAADER/Mlg (pour suivi ;
-Intéressée ;
-Chrono/Archives.

REPUBLIQUE DU CAMEROUN DEPARTEMENT DU MOUNGO Le Sous-Préfet ARRONDISSEMENT DE MELONG REGION DU LITTORAL

Biko Biko Alain Blaise
Administrateur Civil

APPENDIX 5b: Translation of the Research Authorization Letter of the Melong Sub-division Officer

REPUBLIC OF CAMEROON
Peace-Work-Fatherland
LITTORAL REGION
MOUNGO DIVISION
MELONG SUBDIVISION
SUBDIVISIONAL OFFICER
PRIVATE SECRETARIAT

REPUBLIC OF CAMEROON
Peace-Work-Fatherland
LITTORAL REGION
MOUNGO DIVISION
MELONG SUBDIVISION
SUBDIVISIONAL OFFICER
PRIVATE SECRETARIAT

RESEARCH AUTHORIZATION

N^0___115__/AR/C16.05/SP

The undersigned Deputy Prefect of the Melong District authorizes Ms. BATE NTOH GUILY SYBELLE, a student at Strathmore University Business School in Nairobi, Kenya, to carry out research work in the area covered by this administrative unit, from December 20, 2023 to January 26, 2024, on the theme: "Analysis of factors influencing the financial inclusion of coffee farmers in the Littoral Region of Cameroon".

However, such research must comply strictly with current regulations. In addition, the results will be shared with the Melong District Delegation of Agriculture and Rural Development.

In witness whereof, the present authorization is established and delivered to the interested party, to serve and be worth what is rightful. /-

Copy: **Melong,**

DAADER/Mlg (for follow-up;)

- Interested party ;

-Chrono/Archives.

APPENDIX 6a: Research Internship Certificate.

REPUBLIQUE DU CAMEROUN
Paix –Travail- Patrie
REGION DU LITTORAL
DEPARTEMENT DU MOUNGO
DELEGATION DE L'AGRICULTURE
ET DU DEVELOPPEMENT RURAL
SECTION DEVELOPPEMENT DE L'AGRICULTURE
DAADER MELONG

Minader

REPUBLIC OF CAMEROON
Peace – Work – Fatherland
LITTORAL REGION
MOUNGO DIVISION
DELEGATION OF AGRICULTURE
AND RURAL DEVELOPMENT
DIVISIONAL SERVICE OF
AGRICULTURAL DEVELOPMENT
MELONG SUB –DIVISIONAL
DELEGATION

N° 09 /AS/MELONG/DAADER/2024

ATTESTATION DE STAGE

Le Délégué de l'Agriculture et du Développement Rural de Mélong soussigné atteste que Madame **BATE NTOH GUITY SYBELLE**, étudiante à la Strathmou University Business School Nairobi Kenya a effectué des travaux de recherche dans l'Arrondissement de Mélong plus précisément dans les villages Njinjou 1, Njinjou 2, New-Mélong, Nkongsoung, Mouaguel , Mélong centre du 20 Décembre 2023 au 26 Janvier 2024 sur le thème : « **Analysis of Factors Influencing Financial inclusion of coffee farmers in Littoral Region Cameroon** »

Toutefois ces travaux de recherche ont été encadrés par les cadres de la Délégation du l'Agriculture notamment les chefs de poste des villages suscités ainsi que le Délégué de l'Agriculture et du Développement Rural de Mélong

En foi de quoi la présente attestation est établie et délivrée à l'intéressée pour servir et valoir ce que de droit. /-

Fait à Mélong le 27 JAN 2024

LE DÉLÉGUÉ

Ingénieur des Travaux de l'Agriculture

APPENDIX 6b: English translation of the Research Internship Certificate.

REPUBLIC OF CAMEROON

Peace-Work-Fatherland

LITTORAL REGION

MOUNGO DIVISION
MELONG SUBDIVISION

DELEGATION OF AGRICULTURE AND RURAL DEVELOPMENT

DIVISIONAL SERVICE OF AGRICULTURAL DEVELOPMENT

MELONG SUB-DIVISIONAL DELEGATION

REPUBLIC OF CAMEROON

Peace-Work-Fatherland

LITTORAL REGION

MOUNGO DIVISION
MELONG SUBDIVISION

DELEGATION OF AGRICULTURE AND RURAL DEVELOPMENT

DIVISIONAL SERVICE OF AGRICULTURAL DEVELOPMENT

MELONG SUB-DIVISIONAL DELEGATION

N^0__02___/AS/MELONG/DAADER/2024

CERTIFICATE OF INTERNSHIP

The Delegate of Agriculture and Rural Development of Melong undersigned attests that Madam BATE NTOH GUILY SYBELLE, student at Strathmore University Business School Nairobi Kenya carried out research work in the Subdivision of Melong more precisely in the villages Njinjou 1, Njinjou 2, New-Melong, Nkongsoung, Mouaguel, Melong center from December 20, 2023 to January 26, 2024 on the topic: "Analysis of Factors Influencing Financial Inclusion of Coffee Farmers in the Littoral Region of Cameroon".

However, this research work was supervised by the Delegation of Agriculture, in particular the heads of station of the above-mentioned villages, as well as the Delegate of Agriculture and Rural Development of Melong.

In witness whereof, the present certificate has been drawn up and delivered to the interested party to serve and be worth what is rightfully due. /-

Signed in Melong on___ January 27, 2024____**The Delegate**