FACTOR INFLUENCING THE FINANCIAL SUSTAINABILITY OF MICROFINANCE INSTITUTION IN NEPAL

A dissertation submitted to the Office of the Dean, Faculty of Management in partial fulfillment of the Requirement for the Master's Degree

By

Birendra Bahadur Saud

Campus Roll No: 3281/21

T.U. Reg. No: 7-2-404-153-2016

Exam Symbol No: 35441/21

Shanker Dev Campus

Kathmandu, Nepal

August, 2024

CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"FACTOR INFLUENCING THE FINANCIAL SUSTAINABILITY OF MICROFINANCE INSTITUTION IN NEPAL"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degree nor has it been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declared that all information sources and literature used are cited in the reference section of the dissertation.

.....

Birendra Bahadur Saud

August, 2024

REPORT OF RESEARCH COMMITTEE

Mr. Birendra Bahadur Saud has defended research proposal entitled **"FACTOR INFLUENCING THE FINANCIAL SUSTAINABILITY OF MICROFINANCE INSTITUTION IN NEPAL"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Indra Bahadur Bohara and submit the thesis for evaluation and viva voce examination.

.....
Indra Bahadur Bohara
Dissertation Supervisor

Dissertation Proposal Defended Date:

.....

Dissertation Submitted Date:

.....

Dissertation Viva-voce Date:

.....

.....
Asso. Prof. Dr. Sajeeb Kumar Shrestha
Research Department

APPROVAL SHEET

We have examined the dissertation entitled **"FACTOR INFLUENCING THE FINANCIAL SUSTAINABILITY OF MICROFINANCE INSTITUTION IN NEPAL"** presented by Mr. Birendra Bahadur Saud for the degree of Masters of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

……
Indra Bahadur Bohara
Dissertation Supervisor

……
Internal Examiner

……..
Internal Expert

……
External Expert

……
Asso. Prof. Dr. Sajeeb Kumar Shrestha
Chairperson, Research Committee

……
Asso. Prof. Dr. Krishna Prasad Acharya
Campus Chief

ACKNOWLEDGEMENTS

This Graduate Research Report (GRP) has been successfully completed with the invaluable support, guidance, and cooperation of many individuals. First and foremost, I would like to express my sincere appreciation to the research committee of Shankar Dev Campus for providing me with the opportunity to undertake this study as part of the requirements for the Master of Business Studies (MBS) program. I am deeply thankful to the department for granting ethical approval and offering insightful suggestions and feedback that have significantly contributed to the quality of this research.

I wish to extend my heartfelt gratitude to my thesis supervisor, Indra Bahadur Bohara in shaping this study from its inception. His constructive feedback and moral support at every stage of the research process have been invaluable, enabling me to refine my work and deepen my research knowledge, which will serve as a strong foundation for future studies.

I would like to express my sincere gratitude to Asso. Prof. Dr. Sajeeb Kumar Shrestha Chairperson, Research Committee, along with Asso. Prof. Dr. Krishna Prasad Acharya Campus Chief, for providing the necessary information and support throughout the completion of this report. Their efficient coordination, cooperation, and guidance during my research has been invaluable. Additionally, I am grateful to the faculty members of the MBS program for their valuable suggestions, and to the entire staff for their constant support.

I am also grateful to the faculty members and staff who have provided their assistance throughout this journey. My sincere thanks go to my friends, whose collaboration and camaraderie have made this experience both enlightening and enjoyable.

Lastly, I would like to express my deepest appreciation to my family, whose constant support, encouragement and inspiration have been crucial in completing this report.

Birendra Bahadur Saudd

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

MFIs	Microfinance Institutions
OER	Operating Expenses Ratio
NAB	Numbers of Active Borrowers
ROA	Return on Assets
ROE	Return on Equity
AGE	Age of Microfinance Institutions
DER	Debt-to-Equity Ratio
FSS	Financial Self-Sufficiency
OSS	Operational Self-Sufficiency
CGAP	Consultative Group of Assist the Poor
NRB	Nepal Rastra Bank
SFCL	Small Farmer Cooperative Limited
Ltd	Limited

ABSTRACT

This study investigates and analyze the relationship and effects of the operating expense ratio, number of active borrowers, return on assets, return on equity, age of MFIs, and debt-to-equity ratio on the financial sustainability of microfinance institutions in Nepal, over the period from 2013/14 to 2022/23. The research focuses on variables such as the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), and Debt-to-Equity Ratio (DER), with Financial Self-Sufficiency (FSS) serving as the dependent variable. Utilizing descriptive and causal-comparative research designs, the study employs descriptive statistics, correlation analysis, and regression analysis to explore how these factors influence the financial sustainability of MFIs.

The findings show a significant negative correlation between OER and FSS, indicating that higher operating expenses reduce financial self-sufficiency. In contrast, ROA has a strong positive correlation with FSS, highlighting the importance of returns on assets. NAB and ROE are positively correlated with FSS but have weaker impacts, while AGE and DER show minimal influence on financial self-sufficiency.

The regression analysis reveals that OER has a significant negative impact on FSS (β = -0.023, p = .001), indicating that higher operating expenses reduce financial self-sufficiency. ROA shows a significant positive effect (β = 0.081, p = .002), emphasizing the importance of asset returns. NAB also has a small but significant positive impact (β = 8.289E-7, p = .024), suggesting that more active borrowers slightly enhance FSS. AGE negatively impacts FSS (β = -0.013, p = .002), indicating that older MFIs may experience declining financial sustainability. However, ROE (β = 0.005, p = .091) and DER (β = -0.015, p = .167) do not significantly affect FSS. The model explains 77% of the variability in FSS, highlighting the importance of managing expenses and optimizing returns to ensure financial sustainability.

Keywords: *Financial Sustainability, Microfinance Institutions, operating expense ratio, number of active borrowers, return on assets, return on equity, age of MFIs, and debt-to-equity ratio, Nepal.*

CHAPTER-I

INTRODUCTION

This paper seeks to assess the factors influencing the long-term financial viability of microfinance institutions in Nepal. Accordingly, this chapter will be structured into several sections. The initial segment will provide an overview, starting with the context of the study, followed by an exploration of Nepalese microfinance institutions and the problem statement. The objectives, hypotheses, significance, scope, and limitations will be detailed in this introductory part.

1.1 Background of the Study

Microfinance is focusing on low-income groups and small & medium enterprises and providing small size of on-going credit services to these target groups with other financial services. Basic characteristics of microfinance are small amount of credit, unsecured loan, loan without physical mortgage and serving the poor with various financial services such as saving, insurance, credit and remittance. There are fifty-two microfinance institutions in Nepal, with forty-nine being retail microfinance institutions and three being wholesale microfinance institutions.

Microfinance plays a crucial role in empowering impoverished and low-income individuals by offering financial services to support their businesses and enhance their livelihoods through income-generating activities. These services typically include small loans for short durations, without requiring collateral, and with manageable monthly repayment schedules. Microfinance institutions (MFIs) cater specifically to the needs of the poor, especially disadvantaged women, providing them access to credit, savings, micro-insurance, and remittance services, thereby contributing to poverty alleviation (Dhakal, 2012).

Microfinance is widely recognized as a powerful tool for poverty alleviation. Despite its substantial impact in various countries, these services have yet to reach rural areas in Nepal. Shrestha notes that, similar to many other developing nations, a significant portion of Nepal's population remains excluded from essential financial services (Shrestha, 2009).

Microfinance institutions (MFIs) play a crucial role in rural loan distribution systems, serving as key entities. These organizations specialize in offering financial services to

individuals with low incomes. Most MFIs offer loans to their members, and many also extend additional services such as insurance and savings accounts (Singh and Yadav 2012).

Microfinance is the supply of loans, savings, money transfers, insurance, and other financial services to these low-income and un-bankable people. Microfinance institutions which encompass a wide range of financial service providers that vary in legal structure, mission, and methodology offer these financial services to clients who do not have access to mainstream banks or other formal financial service providers (Woldeyes, 2012)

Since the Sixth Five Year Plan (1980/80-1984/85), microfinance has been recognized as a pivotal tool in poverty eradication, although its adoption in Nepal remains relatively recent. Microfinance services are widely regarded as an effective means to offer a spectrum of financial services to disadvantaged and marginalized segments of society (Nepal Rastra Bank, 2012), potentially enhancing people's quality of life. Microfinance sustainability represents a progression towards profitability; both are achieved by reducing transaction costs, enhancing goods and services that meet customer needs, generating sufficient revenue, and exploring new funding sources for underserved poor households.

Financial institutions have a primary goal of mobilizing resources, particularly domestic savings, and directing them towards investment. This intermediary role varies across different economic systems. Microfinance has emerged as a crucial tool for reducing poverty globally. Microfinance institutions (MFIs) employ innovative strategies such as group lending, progressive lending, regular repayment schedules, and alternatives to traditional collateral (Kimando et al., 2012). While poverty stems from various factors, its most visible impact is inadequate household income. Enhancing poor households' access to microfinance is thus a global priority.

According to D'espallier et al. (2013), financial sustainability refers to a company's capacity to attain its financial goals independently, without relying on external assistance. This concept is assessed using various metrics such as the Operating Self-Sufficiency (OSS), financial self-sufficiency (FSS), return on assets (ROA), and portfolio growth (Ahlin et al., 2011).

Sustainability is defined as the capacity to sustain ongoing activities into the future, utilizing the organization's existing resources within its regular budgetary and management frameworks (Kimando et al., 2012). Hence, MFIs must strive for strong financial and operational performance to effectively contribute to poverty reduction while meeting their

core goals. Therefore, the study aimed to explore the factors influencing the financial sustainability of MFIs in Nepal.

One of the main objectives of financial institutions is to mobilize resources, mainly domestic savings, and channel them to potential investors. This intermediate role of financial institutions takes on different forms in different economic systems. In many parts of the world, microfinance has become an important instrument for fighting poverty. Microfinance is the provision of credit, savings, money transfers, insurance and other financial services to low-income and selfish people. Covering a wide range of financial service providers that differ in legal form, mission and methodology, microfinance institutions offer these financial services to clients who do not have access to typical banks or other formal financial service providers. The goals of microfinance institutions as development organizations are to meet the financial needs of underserved or underserved markets in order to achieve development goals such as creating jobs, reducing poverty, helping existing businesses to grow or diversify their activities, empowering women or others to reach out to marginalized groups. Population groups and encourage the development of new businesses (Ledgerwood, 1998). In short, microfinance institutions are expected to minimize poverty, which is considered the most important development objective (World Bank, 2000).

According to CGAP (2003), sustainability is synonymous with repeatability. This concept encompasses two essential dimensions: the sustainability of individual transactions and the sustainability of the overarching organization. Sustainable transactions are those that can be replicated over time, ensuring continuity and reliability. Meanwhile, sustainable organizations are equipped with the necessary structure and incentives to perpetuate these transactions effectively. In the context of micro-finance, sustainability signifies more than just financial viability; it underscores a commitment to serving the needs of the poor. Achieving self-sustainability in micro-finance means that an MFO can operate autonomously without relying on external donors. This not only signifies the continued relevance of the MFO within society but also implies its enduring value and contribution to societal welfare. However, it's important to note that while micro-finance sustainability ensures the organization's operational viability, it may not necessarily guarantee optimal societal outcomes.

The sustainability of a microfinance institution is defined by its ability to cover financial, operational, and financing expenses from its generated revenues (Rahman & Luo, 2012).

MFIs achieve financial and operational sustainability when resources are allocated effectively to extend outreach affordably, without relying heavily on donations, subsidies, grants, or other forms of external support (Pissarides et al., 2005; Rao, 2000). While gifts and grants can enhance profitability in the short term for microcredit providers, long-term sustainability may be compromised (Bogan, 2012).

Consequently, MFIs must strive for good financial and operational performance in order to play an important role in poverty reduction while at the same time achieving their main objectives. Therefore, the aim of the study was to examine what actually determines the financial sustainability of MFIs in Nepal by considering some of the explanatory variables in profitability, financial structures, macroeconomic variables and managerial efficiency.

1.2 Problem Statement

In the context of Nepal, few studies have been conducted to study the factor influencing the sustainability of microfinance institution in Nepal, it is necessary to examine the sustainability of microfinance in order to address these types of issues. In order to close this research gaps, this study conducts an empirical investigation of the variables influencing MFIs' ability to sustain their financial operations in Nepal.

A study by Hamid et al. (2024) found that Organizational structure, Gross Domestic Product (GDP), and inflation significantly influenced financial sustainability in India's microfinance sector, liquidity, leverage, and operating costs exert negative pressures on the sustainability of microfinance providers (MFPs) in India. Kunwar (2022) found that depth of outreach is identified as the critical factor influencing the financial sustainability of microfinance institutions in Nepal. However, there was no significant association found between the breadth of outreach, debt-to-equity ratio, cost per borrower, staff productivity, and the financial sustainability of these institutions. Memom (2022) found that economic factors such as inflation, interest rates, private credit, and labor force participation have had a negative impact on financial sustainability, with the exception of GDP growth, which showed a positive influence.

Parera (2021) found that MFIs age and profit margin have a positive and significant impact on financial sustainability of MFIs. Operating expenses ratio and capital structure negatively affected financial sustainability. Other factors like MFIs size, age of MFIs etc. did not have a significant impact on financial sustainability in Sri Lanka. Dev (2017) found

that Return on assets, return on equity, operating expenses to gross loan portfolio are found to be significantly and positively influencing operational self-sufficiency, debt to equity is found to be significantly and negatively influencing self-sufficiency. Hossain and Khan (2016) found that capital assets ratio, operating expense and write-off ratio affect the financial sustainability of MFIs in Bangladesh. MFI size, Age of MFI, borrower per staff members, ratio of savings to total assets, debt equity ratio, outstanding loan to total assets and percentage of female borrowers had no significant impact on financial sustainability of MFIs in Bangladesh. Ahmed et al. (2016) found that Size of MFIs, Capital to Asset ratio, Operating Expense to Asset ratio and Portfolio at Risk are found to be important factors in determining financial sustainability. However, Breadth of Outreach, Cost per borrower, Capital structure, Productivity and Debt to Asset ratio shows insignificant impact on financial sustainability.

The researcher believes that previous studies lacked sufficient emphasis and conclusive findings on the factors influencing financial sustainability, especially neglecting macroeconomic factors like inflation and other essential variables. In the context of Nepal, the existing literature provides some foundation, but it requires further research and clarification based on available knowledge. Previous studies have mainly focused on describing microfinance institutions' performance with basic statistics, leaving out crucial explanatory factors. Therefore, this study aims to fill these gaps by identifying key variables and conducting a thorough analysis of the factor influencing the financial sustainability of microfinance institution in Nepal. It will explore factors such as profitability, financial structure, outreach, and management efficiency indicators. These include variables like operating expense ratio, number of active borrowers, return on assets, return on equity, age of MFIs, debt-to-equity ratio. By examining these factors comprehensively, the study intends to provide more robust and convincing results, contributing to a deeper understanding of what drives the financial sustainability of microfinance institutions in Nepal.

Therefore, this study aims to address the gaps in existing research by incorporating significant internal factors of microfinance institutions that have been overlooked in previous empirical studies. Specifically, variables such as operating expense ratio (OER), number of active borrowers (NAB), return on assets (ROA), return on equity (ROE), age of MFIs (AGE), debt-to-equity ratio (DER). By integrating these variables, the study endeavors to develop a more comprehensive and representative model for assessing the

financial sustainability of microfinance institutions in Nepal and creating a reliable indicator to evaluate the sector's financial performance.

The following are the research questions.

1. What is the position of the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs, Debt-to-Equity Ratio (DER), and Financial Sustainability (FSS) of microfinance institutions (MFIs) in Nepal?
2. Is there any relationship between Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), Debt-to-Equity Ratio (DER), and Financial Sustainability (FSS) of microfinance institutions (MFIs) in Nepal?
3. Do Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), Debt-to-Equity Ratio (DER) affect the Financial Sustainability (FSS) of microfinance institution in Nepal?

1.3 Objectives of the Study

The overall objective of this study is to identify the determinants of financial sustainability of Microfinance Institutions (MFIs) in Nepal. The specific objectives of this study can be enumerated as follows:

1. To assess the position of the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), Debt-to-Equity Ratio (DER), and Financial Sustainability (FSS) of microfinance institutions (MFIs) in Nepal.
2. To examine the relationship between the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), Debt-to-Equity Ratio (DER), and Financial Sustainability (FSS) of microfinance institutions (MFIs) in Nepal.
3. To analyze the effect of the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), Debt-to-Equity Ratio (DER), on Financial Sustainability (FSS) of microfinance institutions (MFIs) in Nepal.

1.4 Research Hypothesis

To achieve the study's objectives, several hypotheses were tested concerning the factors influencing the financial sustainability of MFIs in Nepal. These hypotheses were formulated based on various empirical research and theoretical reviews. In total, six hypotheses were included in the study.

H1: The Operational Expense ratio has a significant negative effect on the financial sustainability of MFIs in Nepal.

H2: The Number of Active Borrowers has a significant positive impact on the financial sustainability of MFIs in Nepal.

H3: The Return on Assets has a significant positive effect on the financial sustainability of MFIs in Nepal.

H4: The Return on equity has a significant positive effect on the financial sustainability of MFIs in Nepal.

H5: The Age of MFIs has a significant negative effect on the financial sustainability of MFIs in Nepal.

H6: The Debt-to-Equity ratio has a significant negative effect on the financial sustainability of MFIs in Nepal.

1.5 Rational of the Study

Microfinance institutions (MFIs) are crucial providers of financial services in rural Nepal, where a significant portion of the population lives in poverty. Despite their important role in rural finance, MFIs only reach a small percentage of the population. This limited outreach suggests challenges in sustainability for these institutions. Crises in the microfinance industry further complicate their performance. Unlike in countries with larger and more developed microfinance sectors, there is no established model for analyzing the financial performance and sustainability of MFIs in Nepal. Therefore, this study aims to assess and determine the financial sustainability of microfinance institutions in Nepal. It seeks to provide evidence on factors that impact their financial stability.

To achieve their mission effectively, MFIs themselves need to be financially sustainable. This study aims to identify key factors contributing to the financial sustainability of MFIs, particularly in Nepal. By doing so, it aims to provide valuable insights to decision-makers

within MFIs, enabling them to better manage factors crucial to their sustainability. Given that a majority of Nepal's population is economically disadvantaged and relies on MFIs for capital and financial services, understanding the sustainability factors is essential. This knowledge can indirectly assist MFIs in improving their operational strategies to ensure long-term viability.

Financial sustainability in microfinance aligns with broader goals of improving living standards for the poor and fostering inclusive economic growth. While currently supported by foreign donors and international agencies, there is a need for MFIs to eventually secure sustainable financial resources internally for long-term stability and independence.

Therefore, it is crucial to investigate how microfinance institutions (MFIs) can remain sustainable. This involves ensuring they can consistently provide microfinance services and continue to help reduce poverty. The first step is understanding the factors that impact their financial sustainability. This study aims to identify these factors affecting the financial sustainability of MFIs in Nepal, a country with significant poverty challenges.

- This research aims to provide valuable insights to decision makers like investors, donors, creditors, clients, and government officials regarding the financial health of microfinance institutions (MFIs).
- It will offer information to MFI management and other stakeholders about the key factors that influence financial sustainability.
- To assist policymakers, including the Nepal Rastra Bank, in supporting, encouraging, and promoting MFIs effectively as a regulatory body.
- Based on the findings, potential recommendations include strategies to maintain financial sustainability and improve or update the current financial structure of the institution.
- This research will also serve as a guide for further studies in this area.

1.6 Limitations of the Study

The research has the following limitations:

1. data only includes eight MFIs, so findings may not apply to the larger number of MFIs across Nepal.
2. The study relies solely on secondary data. Using primary data could lead to more insightful analysis.

3. Due to the recent emergence of microfinance companies and issues with data availability, the study could not include all microfinance organizations in Nepal. The regulator has not yet started publishing their annual reports on their website, which has made it challenging to obtain sufficient data for a comprehensive sample of MFIs.
4. The researcher believes that the designs and methodologies used are suitable for achieving the study's objectives.
5. Many factors impact microfinance institution sustainability, but this study only considers limited operating expense ratio, number of active borrowers, return on assets, return on equity, age of MFIs, debt-to-equity ratio which is a study limitation.
6. This study aligns with existing literature, but interpretations may be influenced by cited authors' perspectives.

CHAPTER-II

LITERATURE REVIEW

This chapter delves into understanding the financial sustainability of microfinance institutions through theoretical and empirical perspectives. It begins with an overview of microfinance concepts and theories in the first section. The second section reviews existing research that investigates internal and external factors affecting the financial sustainability of MFIs. Lastly, the chapter identifies gaps in current research that this study aims to address.

2.1 Conceptual Review

Definition of Microfinance

Various authors and organizations have described microfinance institutions differently. However, the essence of these definitions remains consistent: microfinance involves providing financial services, such as savings and credit, to poor and low-income households who do not have access to traditional banking services.

Microfinance aims to support and expand services for disadvantaged individuals, helping them improve their standard of living. According to Nadar (2008), microfinance plays a crucial role in fostering economic growth, buffering against economic instability, and empowering women. Women, in particular, are more likely to repay loans and prioritize their families' welfare, making them a focus for investment due to their "multiplier impact" on the efficiency of credit funds. In essence, microfinance supports entrepreneurship and serves as a lifeline for the economically vulnerable who lack traditional collateral.

According to the Consultative Group to Assist the Poor (CGAP, 2012), "microfinance" is defined as the provision of formal financial services to poor and low-income individuals, as well as others who are systematically excluded from the traditional financial system. It includes not only offering various credit products (for consumption, business purposes, social obligations, emergencies, etc.) but also savings, money transfers, and insurance services.

Microfinance provides funding for various purposes, often aimed at improving micro-enterprises. The range of services offered reflects the diverse economic needs of individuals, families, and businesses, especially those living in poverty who lack access to

traditional banks. Due to these diverse needs and the sector's focus on serving the underserved, microfinance institutions often use unconventional methods like group lending or alternative forms of collateral not typically accepted by formal financial sectors such as banks. According to Robinson (2001), microfinance refers to small-scale financial services—often including credit and savings—provided to people engaged in farming, fishing, herding, small-scale enterprises involved in production, recycling, repairs, or sales, service providers, wage or commission earners, those earning from renting small plots of land, vehicles, draft animals, tools, and equipment. This support extends to individuals and businesses at the local level in developing countries, both rural and urban (Robinson, 2001).

In reality, many microfinance banks offer socioeconomic support to low-income individuals, including team building, awareness campaigns, and training in financial and managerial skills for group members (Ledgerwood, 1998). This shows that beyond providing financial access to the poor, it's crucial to enhance their skills and confidence. According to Basu et al. (2004), microfinance institutions (MFIs) are viewed as complementing the traditional banking sector by efficiently providing financial services to disadvantaged populations. The rationale behind enhancing financial access lies in empowering the poor to develop income-generating capacities, thereby enabling them to access essential development resources and break free from the complexities of poverty. This approach aims to reduce poverty by improving access to capital and financial services.

History of Microfinance

The concept and aspirations behind microfinance are not new. Informal savings and credit groups have operated for centuries worldwide, from Ghana to Mexico to India and beyond (Helms and Allen, 2006). In Europe, as early as the fifteenth century, the Catholic Church established pawn shops as an alternative to usurious moneylenders, which spread throughout urban areas during that time. Formal credit and savings institutions for the poor have also existed for generations, providing financial services to clients historically overlooked by commercial banks. The Irish Loan Fund system, starting in the early 1700s, is an enduring example, with around 300 branches across Ireland by the 1840s (Helms and Allen, 2006).

Conversely, in the early 1800s, Friedrich Wilhelm Raiffeisen founded a credit association primarily for farmers in rural areas based on cooperative principles in Germany. This model quickly expanded across Germany and later to other parts of Europe, North America, and developing countries, emphasizing savings mobilization and financial education for

impoverished farmers (Ledgerwood, 1998). Raiffeisen's concept also gained traction in rural Latin America in the early 1900s (Helms and Allen, 2006).

Starting in the mid-1980s, the subsidized, targeted credit model supported by many donors faced criticism due to significant loan losses and frequent recapitalizations needed to sustain operations. It became evident that market-based solutions were necessary. This realization led to a new approach that viewed microfinance as integral to the overall financial system. The focus shifted from simply disbursing subsidized loans to creating local, sustainable institutions to serve the poor. By the early 1990s, the term "microfinance" emerged, encompassing not only credit but also other financial services for low-income individuals (Ellan, 2006).

The emergence of microcredit initiatives marked a significant milestone in global finance. At the inaugural Microcredit Summit in Washington, D.C., 2,900 delegates from 137 countries, representing approximately 1,500 organizations, convened. This event marked the formal establishment of the global microfinance industry. Over time, the industry's focus evolved from providing credit for social welfare to achieving financial sustainability. This shift necessitated offering a comprehensive range of financial products and services aimed at reaching a broader population (Wondimu, 2022).

Microfinance in Nepal

In Nepal, modern microfinance practices began to take shape relatively recently. However, elements of modern microfinance have been in practice since 1975 with the initiation of the Small Farmers Development Program under the Agricultural Development Bank of Nepal. Traditional cooperative practices have also been longstanding in Nepal. The modern microfinance institutions (MFIs) in Nepal draw inspiration from the microfinance model pioneered by Bangladesh's Grameen Bank. The government initiated the establishment of the first Grameen Bank replicator microfinance banks in 1992 through five Regional Development Banks. Subsequently, NGOs and private microfinance banks also started their programs in the mid-1990s, contributing to the significant development of Nepal's microfinance industry within two decades, particularly benefiting the rural financial sector (Dulal, 2013).

Before 2008, although Nepal had a history of microfinance spanning over thirty years, there was no official government policy specifically for microfinance (Oli, 2018). Despite this, there was a noticeable demand for microfinance services among impoverished

communities. Inspired by successful microfinance models in countries like Bangladesh, India, the Philippines, Indonesia, Pakistan, and others, the Government of Nepal introduced the "National Microfinance Policy, 2008," on the recommendation of the Nepal Rastra Bank. This policy aimed to address organizational and legal challenges, facilitate the smooth delivery of microfinance services in rural areas, expand access to those in need, foster competition among MFIs, and encourage private sector participation in sustainable microfinance initiatives (Gautam, 2023). As of the end of the fiscal year 2013/24, there were fifty-five MFIs operating in the country, according to current data from the Nepal Rastra Bank.

Legal Framework for MFIs

Inspired by the impressive success stories of countries like Bangladesh, India, the Philippines, Indonesia, Pakistan, and other developing nations in reducing poverty through extensive financial services aimed at the poorest rural and semi-urban communities, the Government of Nepal heeded the advice of the Nepal Rastra Bank and introduced the "National Microfinance Policy, 2008." This policy was designed to tackle organizational and legal hurdles, ensuring smooth delivery of microfinance services in rural areas, improving accessibility for the most vulnerable, promoting competition among Microfinance Institutions (MFIs), and encouraging private sector participation in sustainable microfinance initiatives (Gautam, 2023).

The Nepal Rastra Bank (NRB) acts as the overseeing body for all types of banks and financial institutions licensed under the Bank and Financial Institution Act of 2017. These institutions are categorized into Class 'A,' Class 'B,' Class 'C,' and Class 'D' banks. Moreover, NRB also exercises regulatory control over specific cooperatives with limited banking licenses. Enshrined in the NRB Act of 2002, the bank is entrusted with various responsibilities, such as formulating effective policies, fostering a secure and efficient payment system, regulating and supervising banking and financial entities, and advancing the strength of the banking and financial sector. Additionally, NRB operates a dedicated Microfinance Institutions Supervision Department, mandated to oversee and monitor microfinance activities in Nepal (Gautam, 2023).

Financial Sustainability of MFIs

Sustainability is broadly defined as the capability of an MFI to meet its operational and other expenses through generated revenue and achieve profitability. This definition

highlights the MFI's ability to operate without relying on subsidies. This shift in focus has brought about a new perspective in evaluating MFI performance. Today, many significant players in the industry consider sustainability as a key criterion alongside outreach and impact measures when assessing MFI performance (Woldeyes, 2012).

According to Meyer (2002), financial unsustainability in MFIs often occurs when promised funds from donors or governments fail to materialize. Therefore, MFIs should aim to cover their operational costs from program revenues. In this context, sustainability can be loosely defined as the MFI's ability to independently cover its operating and other expenses from generated revenue, including making a profit. This indicator reflects how well an MFI can operate without relying on subsidies. On the other hand, financial self-sufficiency means that MFIs can cover not only their operating expenses but also their financing and other costs from their own sources of income. An MFI cannot be considered financially sustainable if it consistently operates at a financial loss or performs poorly by these definitions. Furthermore, even a profitable MFI that relies on subsidies or external funds to cover some of its operating expenses may not be recognized as financially viable in the long term. This underscores the importance of both components, operational sustainability and financial self-sufficiency in determining the financial sustainability of microfinance institutions (Sarita, 2022).

Self-sufficiency is viewed as a viable approach for ensuring the long-term viability of the microfinance sector for several reasons. First, the available resources and subsidies are insufficient to provide microfinance to all potential beneficiaries. Second, prioritizing self-sufficiency can reduce costs by improving operational efficiency. Third, organizations that generate their own income are better positioned to leverage additional funds through borrowing. Lastly, relying on subsidies could potentially alter a firm's incentive structure in ways that might increase the risk of adverse outcomes (Woldeyes, 2012).

According to Elias (2020) financial self-sustainability for MFIs means they can cover the costs of borrowed funds and other subsidies received at market rates. This is measured by dividing business revenue, excluding grants for operating expenses. Operational self-sufficiency (OSS) requires MFIs to cover all administrative costs and loan losses from their operating income. It is calculated by dividing operating income by operating expenses. Based on global experience, it is recommended that successful MFIs achieve operational self-sufficiency within three to seven years. OSS is computed as the ratio of operating income to the sum of administrative expenses, loan losses, and interest expenses.

2.2 Theoretical Review

2.2.1 Theories of Microfinance Institutions

According to Yayehyirad (2023), there are two main theories related to microfinance: the Microfinance Poverty Reduction Approach Theory and the Microfinance Financing Theories. Under the Microfinance Poverty Reduction Approach Theory, two main perspectives are recognized: Welfarist Thought and Institutionalist Thought. And under the Microfinance Financing Theories, three theories are identified; Agency Cost Theory, Life Cycle Theory, and Profit Incentive Theory.

Welfarist Thought

Welfarists in microfinance prioritize poverty alleviation through deep outreach, focusing on immediate improvement in participants' well-being, especially among economically active poor, often women. They value social indicators over financial metrics, aiming to empower individuals through self-employment and modest income gains to enhance their families' living conditions. Examples include Grameen Bank in Bangladesh and FINCA-style village banking programs globally.

Institutionalist Thought

The debate between Welfarists and Institutionalists in microfinance revolves around the balance between poverty alleviation and financial sustainability. Welfarists advocate for targeting the poorest with subsidized or low-interest rates, prioritizing immediate welfare gains over profitability. In contrast, Institutionalists argue for sustainable MFIs that can operate without subsidies, using profitability to expand outreach to moderately poor clients through higher interest rates and efficient operations. Despite their differences, both agree on the goal of poverty reduction. The microfinance industry has faced challenges in achieving financial self-sufficiency while effectively serving the poor, despite high repayment rates and disproven assumptions about the poor's ability to handle financial responsibilities. Critical questions remain about how MFIs can best balance social impact with financial viability to effectively reach and support underprivileged communities worldwide.

Agency Cost Theory

The agency theory suggests that debt plays a crucial role in aligning management's actions with shareholders' interests by imposing financial discipline. It posits that higher leverage can pressure managers to generate sufficient cash flows to meet debt obligations, thereby reducing excess cash flow that could be misused. However, the theory acknowledges that in environments with limited information transparency, such as microfinance institutions (MFIs), agency costs can be significant. Debt is used as a mechanism to curb managerial behaviors like excessive perquisite consumption or empire-building, which are detrimental to shareholder value. Despite its potential benefits in reducing agency costs and enhancing managerial focus, excessive leverage driven by agency conflicts can ultimately harm a firm's performance and sustainability. Thus, while agency theory predicts a positive relationship between debt and firm value, its impact depends heavily on the management's ability to navigate and mitigate agency conflicts effectively.

Life Cycle Theory

Microfinance institutions (MFIs) progress through distinct phases in their capital structure as they evolve towards financial sustainability. Initially reliant on donations and concessional funds during the start-up phase, MFIs face high risks that deter private equity investors. Expansion phases focus on extending operations with equity from NGOs and public investors, supplemented by seed capital from International Finance Institutions (IFIs). The consolidation phase sees MFIs formalizing operations, attracting deposits, and incorporating commercial debt to achieve stability. By the integration phase, MFIs transition into microfinance banks, reducing reliance on subsidies and grants while expanding outreach and maintaining financial stability.

Profit Incentive Theory

According to the Profit Incentive Theory (PIT), utilizing commercial funding sources throughout the evolution of microfinance institutions (MFIs) enables them to fulfill their microfinance objectives effectively. This approach increases cost awareness, operational efficiency, and expands outreach. The PIT aligns with the institutionalist perspective by arguing that donor funding is limited and insufficient to scale microfinance operations to meet increasing demand. MFIs driven by profit motives aim to maximize revenues and minimize costs to achieve financial sustainability and build reserves. In contrast, MFIs reliant on grants and subsidies prioritize deep outreach to serve the poorest and rural clients,

despite higher operational costs. Evidence supporting the PIT suggests growing international and internal pressures on MFIs to reduce dependency on subsidies and grants, encouraging them to seek equity and debt financing from commercial sources for greater financial independence.

2.2.2 Models of Microfinance Institution

According to Gautam, (2023) in Nepal, there are several notable microfinance models in operation. These include the Cooperative model, SFCL model, Grameen Bank model, and Community-based Organizations (COs) or Self-Help Groups (SHGs) model. Additionally, specific initiatives such as the Production Credit for Rural Women (PCRW) and Village Banks are recognized as distinct microfinance programs within the country. Various government programs like the Decentralized Local Governance Support Program (DLGSP), Poverty Alleviation Fund (PAF), and rural development schemes also integrate microfinance components, often adopting the SHG model.

Cooperative Model

In 1991, Nepal's government introduced the Cooperative Act of 1992, allowing groups of 25 individuals to establish cooperatives by registering with the Department of Cooperatives under the Ministry of Agriculture and Cooperatives. Savings and Credit Cooperatives (SCCs) operate independently from Nepal Rastra Bank's (NRB) regulatory framework. However, some SCCs have obtained licenses from NRB to offer limited banking services, making them subject to NRB's oversight. SCCs have the flexibility to serve all members of a community regardless of their social and economic status. Typically initiated by groups of 25 individuals within localities or villages, SCCs currently attract membership primarily from relatively affluent families who are able to save. On average, each cooperative has around 100 members.

A cooperative is a group of people who join together voluntarily to pursue shared economic, social, and cultural goals. They collectively own and democratically manage a company. Many cooperatives also include member savings and funding as part of their mission.

Grameen Bank Model

In Nepal during the 1990s, the Grameen Bank lending model pioneered by Professor Muhammad Yunus in Bangladesh was adopted and expanded. The Government of Nepal and Nepal Rastra Bank established five regional Grameen Bikas Banks (GBBs) across

development regions. Additionally, national-level NGOs like Nirdhan and the Centre for Self-help Development (CSD) implemented microfinance programs based on this model and later established microfinance development banks.

Subsequently, other prominent NGOs such as Chhimek, DEPROSC, NRDSC, FORWARD, and Jeevan Bikas Samaj (JBS) also launched microfinance initiatives following the Grameen model. Today, GBBs, Private Microfinance Banks (PMFBs), Financial Intermediary NGOs (FI-NGOs), and Savings and Credit Cooperatives (SCCs) continue to provide microfinance services using this approach.

The model's success is notable in areas with developed markets and infrastructure, particularly in the Terai region compared to hilly and mountainous areas. It revolves around forming peer groups of five members each, which then join centers near villages for regular meetings to manage savings, loan requests, and repayments without requiring collateral but relying on group guarantees. Training sessions and participatory approaches like Participatory Rural Appraisal (PRA) are used to identify and educate potential members.

Village Bank Model

The Village Bank (VB) model, introduced in Nepal between 1998 and 2001 through the USAID-funded Women Empowerment Project (WEP) by PACT-Nepal, aimed to empower women through community-managed savings and credit associations. Operated primarily in the Terai region, VBs provided loans from members' savings for productive and consumption purposes. Each VB consisted of 40-50 women who underwent a literacy and financial training program. Despite initial success, many VBs became non-operational after project funding ended, lacking integration with formal financial institutions.

Self-Help Groups (SHGs)/Community Organizations (COs) Model

In Nepal, various forms of self-help groups, like 'Aama Samuha' or mothers' groups, and Community Organizations (COs) play significant roles in community development. These groups are typically led by local women and focus on income generation, addressing social issues, and promoting women's empowerment. They pool savings to provide credit, although they are not exclusively focused on serving the poor. However, many of these groups remain informal and struggle to connect with formal financial institutions due to their legal status. Programs like the Decentralized Local Governance Support Program (DLGSP) and Poverty Alleviation Fund (PAF) support these groups with seed funding and

training to enhance their capabilities, aiming to alleviate poverty through local empowerment initiatives.

Small Farmer Cooperative Limited (SFCL) Model

The Small Farmer Cooperative Limited (SFCL) model in Nepal, supported by GTZ - German Technical Cooperation, originated from the Rural Finance Nepal Project (RUFIN) in 1988. Initially established in Dhading district in 1993, SFCLs have expanded to 228 units across 41 districts, benefiting 139,368 members and 111,494 borrowers. Managed democratically, SFCLs operate with a three-tier structure involving village-level promoters, ward-level intergroup associations, and a Village Development Committee (VDC) Executive Committee. They primarily serve small farmers, providing loans with collateral and receiving wholesale finance from Sana Kisan Bikash Bank Ltd. (SKBBL). Recognized for their impact, SFCLs have contributed significantly to poverty alleviation and rural development in Nepal.

2.3 Empirical Review

Hamid et al. (2024) investigated the relationship between good governance and financial sustainability in India's microfinance sector using the Two-step System Generalized Method of Moments (GMM) method. They found that financial sustainability of microfinance providers (MFPs) in India is significantly influenced by organizational structure, loan size, the proportion of women borrowers, Gross Domestic Product (GDP), and inflation. Factors such as number of borrowers, liquidity, leverage, and operating costs exert negative pressure on MFPs' sustainability. Importantly, national governance institutions (NGIs) diminish the positive impact of organizational structure on sustainability, enhance the beneficial effect of loan size, and mitigate the adverse effects of borrower numbers and leverage. However, NGIs also dampen the positive link between the percentage of women borrowers and the financial sustainability of India's microfinance providers.

Yayehyirad (2023) investigated the factors influencing the financial and operational sustainability of selected Microfinance Institutions (MFIs) in Ethiopia. Using a Generalized Least Squares (GLS) regression model, the study found that both operational self-sufficiency and financial self-sufficiency of MFIs were negatively and statistically significantly impacted by the operating expense ratio and write-offs. Conversely, the

liquidity ratio was found to have a positive and statistically significant impact on sustainability. However, the cost per borrower was found to be insignificant in its impact on sustainability outcomes.

In their 2023 study on the sustainability of Microfinance Institutions (MFIs) in the Philippines, Bhuiyan et al. employed a panel regression model to investigate the adherence of MFIs to double bottom line sustainability. Their findings indicate that profitability, measured by Return on Assets (ROA), is a critical determinant of sustainability. They observed a statistically significant positive relationship between ROA and sustainability index (SI), and a negative impact of Portfolio at Risk (PAR) on SI. Total Assets (TA) demonstrated a positive and significant influence on MFIs' sustainability. Conversely, Borrower per Staff (BPS) and Social Interest (SI) did not exhibit statistically significant relationships with sustainability. The study also noted a negative impact of Debt-to-Equity Ratio (DER) on sustainability, although this relationship lacked statistical significance.

Maeenuddin et al. (2023) investigated predictors of microfinance sustainability in Bangladesh using a two-step system Generalized Method of Moments (GMM) model. Their study found that the financial sustainability of microfinance providers (MFPs) in Bangladesh is positively influenced by factors such as loan size, number of borrowers, percentage of women borrowers, and inflation. Conversely, factors negatively affecting sustainability include organizational structure, liquidity, leverage, cost per borrower, and Gross Domestic Product (GDP).

Memon et al. (2022) employed a fixed-effect model (FEM) to examine the financial sustainability of Microfinance Institutions (MFIs) in South Asia. Their findings indicate that economic indicators such as foreign investment, human development, inflation, interest rate, private credit, and labor force participation negatively impact financial sustainability, with the exception of GDP growth.

Subedi and Karki (2022) conducted a study on the outreach, sustainability, and efficiency of Microfinance Institutions (MFIs) in Nepal, exploring the inter-relationship between depth and sustainability in the Nepalese context. They utilized panel regression analysis and found a significant tradeoff relationship between outreach and sustainability at a 99% confidence interval, further moderated by operational efficiency. Increased operational efficiency was observed to potentially enhance both outreach and sustainability of MFIs.

Chaudhury et al. (2022) examined the factors influencing Operational Self Sufficiency (OSS) of Microfinance Institutions (MFIs) in Bangladesh. They utilized Ordinary Least Squares (OLS) regression and fixed effects regression models to analyze the data. The study found that the operating cost ratio and savings loan ratio significantly impact OSS. Specifically, portfolio yield was found to have a highly significant positive effect on OSS, while the operating cost ratio had a highly significant negative effect. The savings loan ratio also showed a significant negative impact on OSS.

Kuwar (2022) examined the financial sustainability of Microfinance Institutions (MFIs) in Nepal, focusing on factors such as financial self-sufficiency, breadth of outreach, depth of outreach, debt to equity ratio, cost per borrower, and productivity. The study aimed to identify the factors influencing financial sustainability in the Nepalese microfinance sector. Using panel data regression procedures, the research revealed that the depth of outreach emerges as the most critical factor influencing the financial sustainability of microfinance institutions in Nepal. However, the study did not find significant associations between breadth of outreach, debt equity ratio, cost per borrower, and staff productivity with the financial sustainability of these institutions.

Perera (2021) investigated the determinants of financial sustainability of Microfinance Institutions (MFIs) in Sri Lanka using a cross-sectional research design. The study revealed that factors such as MFIs' age, yield on the gross loan portfolio, interest rate, and profit margin positively and significantly influence financial sustainability. Conversely, operating expenses ratio and capital structure were found to negatively affect financial sustainability. Other factors examined, such as average loan size and MFIs' size, did not show a significant impact on financial sustainability in Sri Lanka.

Parvin et al. (2020) conducted a study on the capital structure, financial performance, and sustainability of Microfinance Institutions (MFIs) in Bangladesh using panel data regression analysis. Their research identified Equity to Asset Ratio (EAR), Debt to Loan Ratio (DTL), Risk, and Size as factors influencing Net Interest Expense Ratio (NIER). Additionally, the study found that EAR and DTL positively affect Return on Assets (ROA), while Risk has a negative effect.

Abdulhakim and Mersha (2020) investigated the determinants of financial sustainability of Microfinance Institutions (MFIs) in Ethiopia using an explanatory research design. Their study revealed several key findings: operating expenses were negatively and significantly related to financial sustainability, indicating that higher operating expenses reduce

sustainability. Conversely, factors such as portfolio yield, net profit margin, capital adequacy, and GDP growth were found to have positive and significant effects on the financial sustainability of MFIs in Ethiopia.

Le et al. (2020) conducted a study on the determinants of Operational Self-Sustainability (OSS) of Microfinance Institutions (MFIs) in Vietnam. They employed interviews along with binary logistic and Ordinary Least Squares (OLS) regressions to analyze the data. The study found that OSS is primarily influenced by the legal status of MFIs, with social organizations demonstrating better OSS compared to formal MFIs or programs/projects. Additionally, location and capital structure were identified as significant factors affecting OSS, where MFIs with higher proportions of equity exhibit higher OSS. However, factors such as average loan size per borrower and the age of MFIs did not show statistically significant correlations with OSS.

Lutf and Twaha (2019) conducted an assessment of the financial sustainability of Microfinance Institutions (MFIs) in East Africa using data from the Microfinance Information Exchange spanning from 2012 to 2017. Employing a Bayesian regression model, the study explored factors impacting financial self-sufficiency (FSS), outreach, capital structure, profitability, personnel expense ratio, portfolio quality, Return on Assets (ROA), and Return on Equity (ROE). The research identified that factors such as outreach and profitability positively contribute to the sustainability of MFIs. Specifically, the number of active borrowers, deposits relative to Gross National Product (GNP) per capita, profit margin, and real yield on the portfolio were highlighted as supportive factors. Conversely, challenges to sustainability were linked to factors such as capital structure, efficiency (personnel expenses relative to the loan portfolio), and portfolio quality (loan loss rates and high-risk portfolio items over 30 days). Additionally, debt levels compared to equity and donations were identified as negative influences on financial sustainability.

Salifu et al. (2019) evaluated factors influencing the sustainability and outreach of Microfinance Institutions (MFIs) in Northern Ghana. The study focused on capital structure, financial sustainability, and outreach, gathering insights from managers and operational staff of MFIs through questionnaires. The findings revealed a positive and statistically significant relationship between capital structure and both financial sustainability and outreach of MFIs in Northern Ghana.

Da et al. (2019) investigated the financial sustainability of Microfinance Institutions (MFIs) in Vietnam, focusing on factors such as financial self-sustainability, number of customers,

outstanding loans, capital structure of MFIs, subsidies, cost per customer, and effectiveness of MFIs. They employed a Fixed Effect Model to develop empirical evidence on the determinants affecting MFIs' financial sustainability in Vietnam. Their study identified several key determinants: the growth rate of MFIs' outstanding loans and the efficiency of MFIs' performance were found to positively and significantly impact financial sustainability. Additionally, the ratio of borrowers to the number of staff at MFIs was positively associated with sustainability. However, factors such as the debt-to-equity ratio of MFIs and the incremental cost per client had negative effects on financial sustainability.

Berhe (2018) investigated the determinants of financial sustainability of Microfinance Institutions (MFIs) in Ethiopia, focusing on factors such as breadth of outreach, deposit to loan ratio, financial sustainability, inflation, and operating expense ratio. The study utilized panel data fixed regression to analyze these factors. The findings indicated that both breadth of outreach and deposit to loan ratio significantly influence the financial sustainability of MFIs in Ethiopia positively. However, inflation and operating expense ratio were found to have significant negative relationships with the financial sustainability of MFIs in the country.

Deb (2017) conducted an assessment of sustainability and its determinants among Microfinance Institutions (MFIs) in India, focusing on operational self-sufficiency, capital assets ratio, operating expenses to loan portfolio, portfolio at risk, gross loan portfolio to total assets, debt to equity ratio, return on assets, return on equity, and yield in gross loan portfolio. The study evaluated 54 MFIs over the period from 2009 to 2014, emphasizing operational self-sufficiency and outreach as key parameters. Using a panel data regression model, the research identified significant determinants of operational sustainability. Specifically, return on assets, return on equity, and operating expenses to gross loan portfolio were found to positively influence operational self-sufficiency. Conversely, the debt-to-equity ratio was found to have a significant negative impact on self-sufficiency. The study concluded that the impact of other variables examined was statistically insignificant.

Hossain and Khan (2016) investigated the financial sustainability of Microfinance Institutions (MFIs) in Bangladesh, focusing on factors such as financial sustainability, capital assets ratio, operating expense, write-off ratio, MFI size, age of MFI, borrower per staff members, ratio of savings to total assets, debt equity ratio, outstanding loan to total assets, and percentage of female borrowers. They employed an econometric research

approach to identify these factors. Their study found that capital assets ratio, operating expense, and write-off ratio significantly affect the financial sustainability of MFIs in Bangladesh. However, factors such as MFI size, age of MFI, borrower per staff members, ratio of savings to total assets, debt equity ratio, outstanding loan to total assets, and percentage of female borrowers did not demonstrate a significant impact on the financial sustainability of MFIs in the country.

Ahmed et al. (2016) conducted a study to determine the factors influencing the financial sustainability of Microfinance Institutions (MFIs) in Pakistan. They utilized panel data analysis and examined various factors including financial sustainability, size of MFIs, capital to asset ratio, yield on gross portfolio, operating expense to asset ratio, portfolio at risk, breadth of outreach, cost per borrower, capital structure, productivity, and debt to asset ratio. The findings indicated that the size of MFIs, capital to asset ratio, yield on gross portfolio, operating expense to asset ratio, and portfolio at risk are significant factors influencing financial sustainability in Pakistan. However, breadth of outreach, cost per borrower, capital structure, productivity, and debt to asset ratio showed insignificant impacts on financial sustainability.

Ahmed et al. (2016) conducted a study on the profitability and accountability of Microfinance Institutions (MFIs) in South Asia. They examined factors such as yield on gross loan portfolio, number of active borrowers, age of MFIs, operating expense ratio, financial performance, liquidity ratio, cost per borrower, and profitability. The research aimed to measure profitability and compare it across MFIs in South Asia. Using financial ratio analysis, descriptive statistical analysis, and econometric techniques, the study found several significant results. Yield on gross loan portfolio and the number of active borrowers were identified as factors with significant positive effects on profitability. Conversely, the age of MFIs and operating expense ratio had significant negative effects on financial performance. The liquidity ratio showed an insignificant relationship with profitability, although it was positively associated, while cost per borrower did not exhibit a significant relationship with the profitability of MFIs.

Rahman and Mazlan (2014) examined the determinants of financial sustainability of Microfinance Institutions (MFIs) in Bangladesh, focusing on factors such as size of MFIs, cost per borrower, personnel productivity ratio, yield on gross loan portfolio, average loan balance per borrowers, age of MFIs, debt to equity ratio, operating expense ratio, number of active borrowers, and financial self-sufficiency. The study aimed to investigate the

performance of financial self-sustainability among MFIs and compare their positions in Bangladesh. Using multiple regression techniques, the study found that size of MFIs, cost per borrower, personnel productivity ratio, and yield on gross loan portfolio positively explain the financial self-sufficiency of MFIs in Bangladesh. Conversely, factors such as average loan balance per borrowers, age of MFIs, debt to equity ratio, operating expense ratio, and number of active borrowers were found to have a negative effect on the financial self-sufficiency of MFIs in the country.

Tafesse (2014) conducted a study on the internal determinants of operational and financial sustainability of Microfinance Institutions (MFIs) in Ethiopia. The study focused on factors such as financial sustainability, operational sustainability, cost per borrower, portfolio at risk, operating expense ratio, size of an MFI, personnel productivity ratio, debt to equity ratio, depth of outreach, and age of an MFI. The research aimed to assess the performance of MFIs, investigate factors affecting sustainability and profitability, and analyze trends in sustainability over time. Using multiple regression models, the study found that cost per borrower, portfolio at risk, and operating expense ratio significantly impact the financial sustainability of MFIs in Ethiopia. Additionally, factors such as size of an MFI, personnel productivity ratio, debt to equity ratio, cost per borrower, depth of outreach, and age of an MFI were identified as significant determinants of operational sustainability. However, the age of an MFI was found to have an insignificant impact on the financial sustainability of microfinance institutions.

Tehulu (2013) conducted a study on the determinants of financial sustainability of Microfinance Institutions (MFIs) in East Africa, focusing on factors such as financial sustainability, management inefficiency, size of MFIs, leverage, portfolio at risk, breadth of outreach, loans intensity, and deposit mobilization. The research aimed to empirically investigate these factors in the context of East Africa, where poverty is a significant concern. Using binary probit and ordered probit regression models, the study found several key determinants affecting MFIs' financial sustainability. Specifically, the ratio of gross loan portfolio to total assets and the size of MFIs were identified as factors that positively and significantly influence financial sustainability. On the other hand, management inefficiency measured by the operating expenses to asset ratio and credit risk were found to have a negative and significant impact on the financial sustainability of MFIs in East Africa.

Rai and Rai (2012) conducted a study on factors affecting the financial sustainability of Microfinance Institutions (MFIs), focusing on operational self-sufficiency (OSS), capital/assets ratio, number of active borrowers, operating expense/loan portfolio, percentage of women borrowers, debt equity ratio, age of MFIs, return on equity, and yield. The objectives were to investigate these factors and create a financial sustainability index for the microfinance sector. Using multiple linear regression analysis, the study found that more than half of the variation in the dependent variable, operational self-sufficiency, is attributed to variations in the independent variables considered together. This indicates that the set of independent variables collectively has a significant relationship with the dependent variable in both Bangladesh and India.

Bogan et al. (2007) investigated the impact of capital structure on the financial sustainability of Microfinance Institutions (MFIs), considering factors such as capital structure, MFI age, and funding instruments. The study aimed to examine existing sources of funding for MFIs across different geographic regions and explore how changes in capital structure could enhance future growth and improve financial sustainability. Using hypothesis testing through the "life cycle" of institutional development, the study concluded that empirical evidence did not support the notion that the age of MFIs alone determines sustainability. Instead, the research emphasized the critical role played by capital structure and funding instruments in influencing the financial sustainability of MFIs.

Table 1

Summary of Empirical Review

SN	Authors	Variables	Objectives	Methodology	Finding and conclusions
1	Hamid et al., (2024)	Organizational structure, loan size, the proportion of women borrowers, Gross Domestic Product (GDP), inflation. liquidity,	To investigate the impact of organizational structure (OS), growth outreach and number of active borrowers, women empowerment,	Two-step system generalized method of moments estimates	Financial sustainability in India's microfinance sector is significantly influenced by Organizational structure, loan size, the proportion of women borrowers, Gross Domestic Product (GDP), and inflation. Number of borrowers,

		leverage, operating cost, loan size, borrower numbers, and leverage.	liquidity, leverage and cost efficiency on the financial sustainability of microfinance providers (MFPs) in India and explore the possible moderating effect of the national governance indicators (NGIs)		liquidity, leverage, and operating costs exert negative pressures on the sustainability of microfinance providers (MFPs) in India. Notably, national governance institutions (NGIs) diminish the positive impact of organizational structure on sustainability, enhance the beneficial effect of loan size, and mitigate the adverse effects of borrower numbers and leverage. However, NGIs also dampen the positive link between the percentage of women borrowers and the financial sustainability of India's microfinance providers.
2	Yayehyirad, (2023)	operational self-sufficiency, financial self-sufficiency, operating expense ratio, write off, liquidity ratio,	To examine the factors that influence the financial and operational sustainability of selected MFIs in Ethiopia.	GLS regression model	operational self-sufficiency and financial self-sufficiency were negatively and statistically significantly impacted by operating expense ratio and write off. While liquidity ratio has a positive and

		and cost per borrower			statistically significant impact. cost per borrower is insignificant impact.
3	Bhuiyan et al., (2023)	Financial self-sufficiency, Operational self-sufficiency, Depth of outreach, Breadth of outreach, Profitability, portfolio quality, Saff productivity, Efficiency, Leverage, Size	To confirm the adherence of double bottom line sustainability of Microfinance institutions (MFIs) and further to identify the determinants of MFIs sustainability in the Philippines.	Panel regression mode	Profitability of MFIs is the key determinant of sustainability, positive relationship between ROA and SI. PAR has a statistically significant relationship with SI (negative impact), TA has a positive significant impact on sustainability of MFIs, BPS and SI does not have a statistically significant relationship. DER has a negative impact on sustainability but the relationship is not statistically significant.
4	Maeenuddin et al., (2023)	Financial sustainability, loan size, number of borrowers, percentage of women borrowers, inflation, organizational structure, liquidity, leverage, cost per	To examines the financial sustainability of microfinance providers (MFPs) in Bangladesh.	Two-step system GMM	The financial sustainability of Bangladesh's microfinance sector is influenced positively by factors such as loan size, number of borrowers, percentage of women borrowers, and inflation. Conversely, it is negatively affected by organizational structure,

		borrower, and GDP.			liquidity, leverage, cost per borrower, and GDP.
5	Memon et al., (2022)	Foreign direct investment, Human development, Interest rate, Inflation, Private credit, Labor force, GDP growth, and financial sustainability	To explores the financial sustainability of microfinance institutions (MFIs) in the economic context to identify how macro-level economic decisions affect the micro-level decisions in the microfinance sector in South Asia.	fixed-effect model (FEM)	Economic indicators such as foreign investment, human development, inflation, interest rate, private credit, and labor force participation have negatively influenced financial sustainability except for the GDP growth.
6	Subedi and Karki, (2022)	OSS, Operating Expense/Average gross loan portfolio, Average Loan Balance per Borrower, GDP per Capita	To explored the inter-relationship between depth and sustainability of MFI in the Nepalese context.	Panel regression analysis	significant tradeoff relationship between outreach and sustainability at a 99% confidence interval, further moderated by operational efficiency. As a result of increased operational efficiency, MFIs can have better outreach and sustainability

7	Chaudhury et al., (2022)	Operational self-sufficiency age of MFIs, size of MFIs, portfolio at risk, operating cost ratio, borrowing cost ratio, financial cost ratio, breadth of outreach, and portfolio yield	To evaluate the managerial factors that influence Operational Self Sufficiency (OSS) of Micro Finance Institutions (MFIs) in Bangladesh.	Ordinary least squares regression method and fixed effects regression model.	operating cost ratio, savings loan ratio and portfolio yield affect the OSS, portfolio yield has highly significant positive effect, operating cost ratio has highly significant negative effect; savings loan ratio has some significant negative effect on OSS.
8	Kuwar, (2022)	Financial Self-Sufficiency, breadth of outreach, depth of outreach, debt to equity ratio, cost per borrower and productivity.	To identify the factors affecting financial sustainability of microfinance in Nepal.	Panel data regression procedures Analysis	The depth of outreach is the most crucial factor influencing the financial sustainability of microfinance institutions. However, no significant associations were observed between breadth of outreach, debt equity ratio, cost per borrower, and staff productivity with the financial sustainability of these institutions.
9	Perera, (2021)	MFIs age, Operating expense ratio, financial sustainability of MFIs, interest	To determine the influential factors of financial sustainability in microfinance	Cross-sectional research design	MFIs age, the yield on the gross loan portfolio, interest rate and profit margin have a positive and significant impact on financial sustainability of

		rate, capital structure, portfolio risk, average loan size, MFIs size, lending methodology, geographic locations, write off ratio.	institutions in Sri Lanka.		MFIs. Operating expenses ratio and capital structure negatively affected financial sustainability. Other factors like average loan size, MFIs size, etc. did not have a significant impact on financial sustainability in Sri Lanka.
10	Parvin et al., (2020)	Return on Asset (ROA), Net Income to Expenditure (NIER), Equity to Asset Ratio (EAR), Debt to Loan Ratio (DTL)	Does the financial structure in terms of financial leverage affect the financial performance: Financial sustainability, depth, and breadth of outreach of MFIs?	Panel data regression analysis	Equity to Asset Ratio (EAR), Debt to Loan Ratio (DTL), Risk, and Size are the factors that influence NIER. Furthermore, EAR, and DTL have a positive effect on ROA, and Risk has a negative effect.
11	Abdulhakim and Mersha, (2020)	Operating expense, Portfolio yield, Net profit margin, capital adequacy, GDP growth and	To empirically investigate the determinants of financial sustainability of MFIs in Ethiopia, where	Explanatory research design	There are negative and significant relationship between Operating expense and financial sustainability, Portfolio yield, Net profit margin, capital adequacy and

		financial sustainability.	poverty is a serious problem.		GDP growth have positive significant effect on financial sustainability.
12	Le et al., (2020)	OSS, legal status, location, capital structure, average loan size per borrower and age of MFIs	To investigate the determinants of the Operational Self-Sustainability (OSS) of Vietnamese microfinance institutions (MFIs).	Interview, binary logistics and OLS regressions.	OSS are most affected by legal status (social organizations have better OSS than formal MFIs or programs/projects), location, capital structure (MFIs with more equity proportion have higher OSS), average loan size per borrower and age of MFIs do not have statistically significant correlation with OSS.
13	Lutf and Twaha, (2019)	Financial self-sufficiency (FSS), Outreach, Capital Structure, Profitability, Personnel expense ratio, Portfolio quality, Return on Assets (ROA) and Return on Equity (ROE)	Attempts to look into Micro-Finance Institutions' performance from the financial sustainability angle in East Africa with secondary data sources from the Micro finance information exchange for the	Bayesian Regression model	Factors like outreach and profitability help sustain microfinance, while factors like capital structure, efficiency, and portfolio quality pose challenges. Specifically, number of active borrowers, deposits relative to GNP per capita, profit margin, and real yield on the portfolio contribute positively to sustainability. Factors like debt levels compared to

			period 2012 – 2017.		equity, donations, personnel expenses relative to the loan portfolio, loan loss rates, and high-risk portfolio items over 30 days negatively impact financial sustainability.
14	Salifu et al., (2019)	capital structure, financial sustainability, and outreach	The study examined the factors that influenced the sustainability and outreach of microfinance institutions in northern Ghana.	Questionnaires	The study found: a positive statistically significant relationship between capital structure and financial sustainability and found statistically significant relationship between capital structure and outreach
15	Da et al., (2019)	Financial self-sustainability, Number of customers, Outstanding loans, Capital Structure of MFI, Subsidies, Cost per customers, Effectiveness of MFIs	Developing empirical evidence for the determinants that affect the financial sustainability of MFIs in Viet Nam.	Fixed Effect Model	the growth rate of MFIs' outstanding loans, the efficiency of MFIs' performance, the ratio of borrowers to the number of staffs of MFIs with a positive and significant impact on financial sustainability of microfinance institution, the debt-to-equity ratio of MFIs and the incremental cost per client of the MFIs with negative effect

16	Berhe, (2018)	Breadth of outreach, deposit to loan ration, financial sustainability, inflation, operating expense	To find out the factors which affect the financial sustainability of MFIs in Ethiopia.	Panel data fixed regression	Breadth of outreach and deposit to loan ration affect the financial sustainability of MFIs in Ethiopia significantly. inflation and operating expense ratio are significant and negative relationship with financial sustainable of MFIs in Ethiopia.
17	Deb, (2017)	Operational self-sufficiency, Capital Assets Ratio, Operating Expenses to Loan Portfolio, Portfolio at Risk, Gross Loan Portfolio to Total Assets, Debt to Equity, Return on Assets, Return on Equity, Yield in Gross Loan Portfolio	To assess the operational sustainability of 54 MFIs from 2009- 2014 based on two broad parameters i.e. operational self-sufficiency and outreach. To identify the determinants of operational sustainability	Panel data regression model	Return on assets, return on equity, operating expenses to gross loan portfolio are found to be significantly and positively influencing operational self-sufficiency, debt to equity is found to be significantly and negatively influencing self-sufficiency. Impact of other variables was found insignificant.
18	Hossain and Khan, (2016)	Financial sustainability, capital assets ratio, operating expense, write-off ratio, MFI	to identify factors affecting financial sustainability of MFIs in Bangladesh.	econometric research approach	capital assets ratio, operating expense and write-off ratio affect the financial sustainability of MFIs in Bangladesh. MFI size, Age of MFI,

		size, Age of MFI, borrower per staff members, ratio of savings to total assets, debt equity ratio, outstanding loan to total assets, percentage of female borrowers			borrower per staff members, ratio of savings to total assets, debt equity ratio, outstanding loan to total assets and percentage of female borrowers had no significant impact on financial sustainability of MFIs in Bangladesh.
19	Ahmed et al., (2016)	Financial sustainability, Size of MFIs, Capital to Asset ratio, Yield on Gross Portfolio, Operating Expense to Asset ratio, Portfolio at Risk, Breadth of Outreach, Cost per borrower, Capital structure, Productivity, Debt to Asset ratio.	To identify those factors that have significant impact on financial sustainability of microfinance institutions in Pakistan.	Panel data analysis	Size of MFIs, Capital to Asset ratio, Yield on Gross Portfolio, Operating Expense to Asset ratio and Portfolio at Risk are found to be important factors in determining financial sustainability. However, Breadth of Outreach, Cost per borrower, Capital structure, Productivity and Debt to Asset ratio shows insignificant impact on financial sustainability.
20	Ahmed et al., (2016)	yield on gross loan, number of active borrowers, ages, operating expense ratio, financial	To measuring the profitability and compare the profitability and accountability of microfinance	financial ratio analysis, descriptive statistical analysis, and	Yield on gross loan portfolio and the number of active borrowers has significant positive effects, conversely, ages and operating expense

		performance, Liquidity ratio, cost per borrower, profitability.	institutions (MFIs) in South Asia.	the econometric technique	ratio have significant negative effects on financial performance. Liquidity ratio has been shown as insignificant, but a positive relationship and cost per borrower was found to have no relationship with the profitability of MFIs.
21	Rahman and Mazlan, (2014)	Size of MFIs, Cost per Borrower, Yield on Gross loan Portfolio, average Loan Balance per Borrowers, Age of MFIs, Debt to Equity Ratio, Operating Expense Ratio, Number of active borrowers and financial self-sufficiency	To investigates the performances of financial self-sustainability of microfinance institutions and compared their positions in Bangladesh.	Multiple regression technique	Size of MFIs, Cost per Borrower, Personnel Productivity Ratio and Yield on Gross loan Portfolio positively explain the financial self-sufficiency of MFIs in Bangladesh. On the other hand, variables of average Loan Balance per Borrowers, Age of MFIs, Debt to Equity Ratio, Operating Expense Ratio, and Number of active borrowers have a negative effect on the financial self-sufficiency of FSS of MFIs in Bangladesh
22	Tafesse, (2014)	Financial sustainability, Operational sustainability,	To investigate the performance of the MFIs; will assess the	Multiple regression models	Cost per borrower, portfolio at risk, and operating expense ratio affect the financial

		Cost per borrower, portfolio at risk, operating expense ratio Size of an MFI, personnel productivity ratio, debt to equity ratio, cost per borrower, depth of outreach, and age of an MFI.	factor that affects sustainability profitability of the MFIs and also look at the trends of the sustainability overtime.		sustainability of microfinance institution. Size of an MFI, personnel productivity ratio, debt to equity ratio, cost per borrower, depth of outreach and age of an MFI affects the operational sustainability of Ethiopian MFIs significantly. And the age of an MFI has insignificant impact on financial sustainability of microfinance.
23	Tehulu, (2013)	financial sustainability, Management inefficiency, Size of MFIs, Leverage, Portfolio at risk, Breadth of outreach, Loans intensity, Deposit mobilization	To empirically investigate the determinants of financial sustainability of microfinance institutions in East Africa where poverty is a serious problem.	Binary probit and ordered probit regression models	MFIs' financial sustainability is positively and significantly influenced by the ratio of gross loan portfolio to total asset and size. Management inefficiency measured by operating expenses /asset ratio and credit risk are found to have a negative and significant impact on financial sustainability of MFIs.
24	Rai and Rai, (2012)	Operational Self Sufficiency (OSS),	1. To study the factors affecting financial	Multiple Linear	More than half of the variation in dependent variable i.e. Operational

		Capital/Assets ratio, Number of active borrowers, Operating expense/loan portfolio, Percentage of Women borrowers, Debt Equity ratio, Age of MFI's, Return on equity and Yield	sustainability of microfinance institutions. 2. To create a financial sustainability index for the microfinance sector.	Regression Analysis	Self Sufficiency is due to variations in independent variables taken together. This informs that the independent variables, taken together as a set, are significantly related to dependent variable in Bangladesh and India.
25	Bogan et al., (2007)	Capital Structure, MFI age, funding instruments	To examines the existing sources of funding for Microfinance Institutions (MFIs).	Hypothesis test through "life cycle" of institutional development.	Empirical evidence does not support the idea that the age of MFIs alone determines sustainability. Instead, it underscores the critical role of capital structure and funding instruments in determining financial sustainability.

2.4 Research Gap

After reviewing the existing research, it's clear that very few studies have looked into Nepalese microfinance institutions. Most studies on efficiency, outreach, and financial performance have focused on other countries. Despite the dire conditions faced by rural poor, microfinance institutions have emerged as saviors, aiming to lift them out of poverty and unemployment. However, the crucial question remains unanswered: how much have these microfinance programs truly benefited the recipients? There's a lack of studies on

how well Nepalese microfinance institutions perform in terms of profitability, sustainability and their role in reducing poverty.

Another significant gap in previous research is the scarcity of studies on the overall financial stability of microfinance institutions in Nepal. Past studies mainly focused on either how financial performance affects outreach depth or vice versa. Although various factors influencing microfinance institutions' performance have been identified, few studies have examined them within the context of the Nepalese economy, and these often looked at only a limited range of factors.

Despite significant research on various aspects of microfinance institutions (MFIs) in Nepal, there has not been a comprehensive study focusing on the critical financial factors that determine their sustainability. This study seeks to address this gap by using financial sustainability as proxies and examining a wide range of financial and macroeconomic variables. The researcher will analyze variables such as operating expenses ratio (OER), Number of active borrowers (NAB), return on assets (ROA), return on equity (REQ), age of MFIs (AGE), and debt-to-equity ratio (DER) for financial sustainability to better understand their impact on the sustainability of Nepalese MFIs.

CHAPTER-III

RESEARCH METHODOLOGY

Research Methodology is the systematic approach used to solve a research problem. It encompasses a series of sequential steps that a researcher follows while studying a problem with specific objectives in mind. These steps include constructing the research design, defining the type of data needed, outlining procedures for gathering data, determining the population and selecting a sample, and detailing the methods for processing and analyzing data. The primary aim of this chapter is to explore the various research methods and conditions used in conducting the study.

3.1 Research Design

This study adopts a quantitative approach and is based on secondary data. It utilizes both a descriptive research design and a causal-comparative research design to analyze the impact of the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), and Debt-to-Equity Ratio (DER) on the Financial Sustainability (FSS) of microfinance institutions in Nepal. The study draws on relevant data, including historical financial statements such as balance sheets and profit and loss accounts. The objectives are to evaluate the position, explore the relationship, and investigate the effect of these variables on the financial sustainability of MFIs in Nepal. To achieve its objectives, the study employs descriptive, correlation, and regression analysis methods, with secondary data serving as the foundation for the analysis.

3.2 Population and Sample, and Sampling Design

The study focuses on all microfinance institutions currently operational in Nepal. As of July 2024, statistics from the Nepal Rastra Bank (NRB) indicate that fifty-two microfinance institutions are providing services to the impoverished population in Nepal. Of these, forty-nine are retail microfinance institutions, which constitute the population for this study, while the three wholesale microfinance institutions are excluded. Eight MFIs were selected for the study using a purposive sampling method. The study examines data spanning ten years (2013/14 to 2022/23) to analyze trends and performance over time. All data were sourced from the selected MFIs' annual reports and the NRB's supervision reports on MFIs.

Table 2

Selection of MFIs, period of study, and Number of observations

S.N.	Name of MFIs	Study period	Observation (in yrs.)
1.	Nirdhan Uthan Laghubitta Bitiya Sanstha Ltd.	2013/14 to 2022/23	10
2.	Deprose Laghubitta Bitiya Sanstha Ltd.	2013/14 to 2022/23	10
3.	Chhimek Laghubitta Bitiya Sanstha Ltd.	2013/14 to 2022/23	10
4.	Janautthan Samudayic Laghubitta Bittiya Sanstha ltd.	2013/14 to 2022/23	10
5.	Laxmi Laghubitta Bitiya Sanstha Ltd.	2013/14 to 2022/23	10
6.	NMB Laghubitta Bitiya Sanstha Ltd.	2013/14 to 2022/23	10
7.	Mero Microfinance	2013/14 to 2022/23	10
8.	Swabalambhan Laghubitta Bitiya Sanstha Ltd.	2013/14 to 2022/23	10

3.3 Nature and Sources of Data, and the Instrument of Data Collection

This study is based on secondary data obtained from the annual reports of selected MFIs over different time periods. The analysis focuses on a population of eight MFIs chosen for the study. It examines a ten-year period from 2013-14 to 2022-23 to assess their financial status and the relationships between variables. Only the most recent ten years of data were utilized for this analysis. All data were collected from the annual reports of the selected MFIs and the NRB MFIs supervision reports, both covering the last ten years.

3.4 Data Analysis Tools

To analyze the data, the study employed tools such as descriptive statistics, correlation, and regression analysis. The data analysis was conducted using the Statistical Package for Social Sciences (SPSS) and Microsoft Excel.

3.4.1 Descriptive Statistics

This section summarizes the key characteristics of the variables over the sample period, including measures such as the average (mean), spread (standard deviation), and range of values (minimum and maximum). These statistics describe variables such as the Operating Expense Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), and Debt-to-Equity Ratio (DER).

i. Mean

The mean, also known as the average, is a measure of central tendency that represents the sum of all values in a dataset divided by the number of values. It provides a central value around which the data points tend to cluster. For a given set of values, the mean is calculated using the formula:

$$Mean = \frac{\sum \mathrm{X}}{\mathrm{N}}$$

Where,

$\sum$X is the sum of all the values

N is the number of values in the dataset.

ii. Standard Deviation

The standard deviation is a measure of the amount of variation or dispersion in a dataset. It quantifies how spread out the values are around the mean of the dataset. A low standard deviation indicates that the values tend to be close to the mean, while a high standard deviation indicates that the values are spread out over a wider range. For a sample, the standard deviation is calculated using the formula:

$$s = \sqrt{\frac{\sum (X_i - \bar{X})}{n - 1}}$$

Where,

s is the sample standard deviation.

X_i represents each individual value in the dataset.

$\bar{X}$ is the sample mean.

n is the number of values in the sample.

3.4.2 Correlation Analysis

The study also employs correlation analysis to understand relationships between different variables in its comparative research design. This analysis helps determine how closely two variables are related and the direction of their relationship. For instance, a correlation coefficient of -1 indicates a perfect negative relationship, meaning as one variable increases, the other decreases in a perfectly predictable manner. Conversely, a correlation coefficient of +1 indicates a perfect positive relationship, where both variables move in the same direction.

3.4.3 Regression Analysis

Multiple regression analysis was performed to determine the linear relationship between predictor (independent or explanatory) variables (X) and the outcome (dependent) variable (Y). Each regression model provides an equation describing this relationship. The results may vary depending on the sample included in the analysis.

This study aimed to identify the factors influencing the financial sustainability of Nepalese MFIs, using financial self-sufficiency as a measure. The analysis covered the period from 2013-14 to 2022-23 and utilized balanced panel data. The model was structured around six predictor variables: operating expenses ratio (OER), Number of active borrowers (NAB), return on assets (ROA), return on equity (REQ), age of MFIs (AGE), and debt-to-equity ratio (DER). These variables were chosen based on their relevance to financial performance and sustainability, as supported by existing literature and empirical evidence. These are the regression equations:

$FSS_{it} = \beta o + \beta 1\ OER_{it} + \beta 2\ NAB_{it} + \beta 3\ ROA_{it} + \beta 4\ REQ_{it} + \beta 5\ AGE_{it} + \beta 6\ DER_{it} + \mu_{it}.$

Where,

$\beta 1$ to $\beta 6$ are the coefficients of the variables and μ_{it} is the random error term.

Bo: stands for the intercept term which varies across MFIs but is constant over time

OER_{it}: stands for operating expense ratio of MFIs at time t,

NAB_{it}: stands for Number of Active Borrowers of MFIs at the time t,

ROA_{it}: stands for Return on Assets of MFIs at time t,

ROE_{it}: stands for Return on Equity of MFIs at the time t,

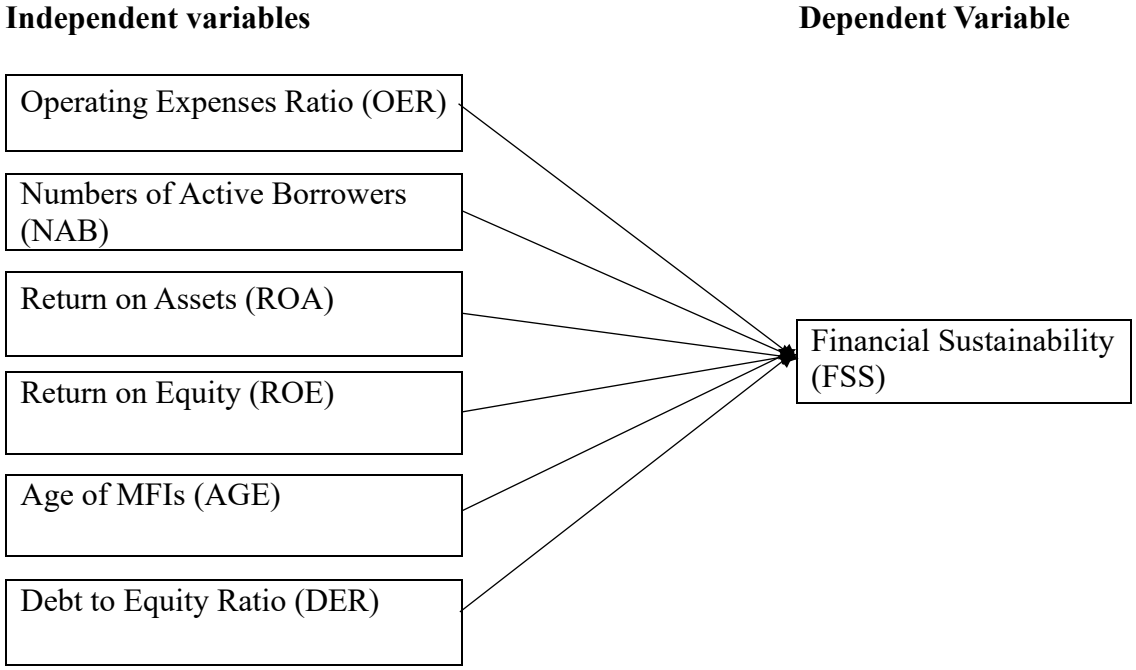
AGE_{it}: stands for Age of MFIs at the time t,

DER_{it}: stands for Debt-to-Equity ratio of MFIs at the time t,

3.5 Research Framework and Definition of Variables

Figure 1

Research Framework



(Source: Rai and Rai (2012), Lutf and Twaha (2019), Rahman and Mazlan (2014))

Definition of Variables

Independent Variables

Operating Expenses Ratio (OER)

According to CGAP (2003), the operating expenses ratio is widely recognized as the primary measure of efficiency for microfinance institutions (MFIs). This ratio assesses how effectively an MFI's management reduces operational costs relative to its level of activity, typically measured by the average gross loan portfolio. A lower operating expenses ratio

indicates that the MFI is managing its operations more efficiently, achieving lower costs for a given level of activity. Essentially, a lower ratio signifies that the MFI is operating more cost-effectively, assuming all other factors remain constant. This measure is crucial for evaluating how well an MFI manages its resources and sustains financial health in the microfinance sector.

Yayehyirad (2023), Chaudhari (2022), Parera (2022), Abdulhakim & Meshra (2021), and Berhe (2018) found that the operating expenses ratio statistically significantly negatively influences microfinance institutions.

Number of Active Borrowers (NAB)

The Number of Active Borrowers measures the breadth of outreach, reflecting the number of impoverished individuals served by a microfinance institution (Woller and Schreiner, 2002). It is generally believed that a higher number of borrowers signifies better outreach, contributing to the greater sustainability of the microfinance institutions. Crombrugghe et al. (2007) observed that increasing the number of borrowers per microfinance institution reduces the average operating cost and increases total operating costs at a slower rate compared to the rise in the number of borrowers. This suggests that increasing the number of borrowers per field officer enhances sustainability indicators for financial self-sufficiency and operating self-sufficiency. Research by Woller and Schreiner (2002) and Melkamu (2012) also found that a rise in the number of borrowers boosts the financial self-sufficiency of an MFI. Therefore, assuming all other factors remain constant, a higher number of borrowers would facilitate greater sustainability for the microfinance institution.

Return on Assets (ROA)

The Return on Assets (RoA) ratio is a key indicator of profitability, assessing how effectively an institution manages its investments in assets to generate profit. It indicates the profit earned in relation to the firm's total asset investment. According to the ACCION audit, an optimal RoA is greater than 3% (> 3%). This ratio falls under the asset management category of financial ratios (Rani, 2015)

In microfinance information exchange (MIX) definition, the return on asset ratio is: (Net Operating Income – Taxes) / Average Assets. The higher the percentage, the better it is as

a high percentage means that the company is succeeding in using its assets to generate sales (Brealey et al., 2008).

Return on Equity (ROE)

Return on equity (ROE) is a key indicator of an institution's profitability, especially for profit-making entities with tangible owners. For these stakeholders, ROE is crucial as it measures the return on their investment in the institution. Total equity includes all equity accounts, minus any distributions such as dividends, stock repurchases, or other payments to shareholders. In many Microfinance Institutions (MFIs), which are often not-for-profit, ROE serves as a proxy for commercial viability. According to ACCION audits, the optimal ROE range is above 15%. ROE is calculated by dividing net income (after taxes and excluding grants or donations) by average total equity (Rani, 2015).

The Microfinance Information Exchange (MIX) defines ROE as (Net Operating Income – Taxes) / Average Equity. Generally, a higher percentage indicates better performance, showing effective use of investors' money (Brealey et al., 2008).

Age of MFIs (AGE)

According to Nyamsogora (2010), "years since its establishment" refers to the duration from the MFI's inception to the time of evaluation. This metric not only indicates the institution's operational history but also serves as a measure of its outreach and development over time. A longer establishment period often suggests greater experience and stability within the microfinance sector, potentially enhancing the MFI's credibility and trust among stakeholders. Additionally, evaluating the length of outreach can provide insights into how effectively the MFI has expanded its services and impacted the communities it serves. Therefore, understanding both the duration since establishment and the extent of outreach is crucial in assessing the overall performance and sustainability of microfinance institutions.

Debt to Equity Ratio (DER)

Berhanu, A. (2016) explain that the debt-to-equity ratio is a straightforward measure of firm leverage and is considered a key factor influencing the sustainability and efficiency of

MFIs. Debates among scholars continue regarding the optimal mix of debt and equity. Three prominent theories have emerged on this topic. In 1958, Modigliani and Miller introduced the theory of 'capital structure irrelevance,' which posits that in perfect capital markets, the specific mix of debt and equity is irrelevant to firm performance. This perspective was further supported by Berk and DeMarzo in 2007, who argued that leverage does not affect the total value of the firm due to the law of one price, but only alters the distribution of cash flows between debt and equity. However, these theories assume perfect capital markets, where trading prices are equal, no taxes exist, and there are no transaction costs—a scenario rarely found in the real world, especially in the MFI sector. In reality, these ideal conditions do not hold, necessitating adjustments when applying Modigliani and Miller's principles to MFIs.

Muriu P., (2011). Microfinance institutions that employ higher debt in their capital structure are more profitable, and highly leveraged microfinance institutions are more profitable, besides, a higher debt ratio can enhance the rate of return on equity capital during good economic times.

Parera (2021) found that capital structure negatively affects the financial sustainability of MFIs. Le et al. (2020), however, found that MFIs with a high proportion of equity have higher OSS, Luff and Twaha (2019) found a positive relationship between capital structure and the sustainability of MFIs. And Salifa (2019), Da et al. (2019), and Dev (2017) also recognize that Debt-to-Equity ratio affect the financial sustainability of microfinance institution.

Dependent Variable

Financial Sustainability

This ratio demonstrates how well an MFI can cover its adjusted expenses from adjusted revenues, excluding grants. It assesses financial sustainability by determining if the revenue earned is sufficient to meet all operating, financial, and loan loss expenses. A ratio exceeding 100% indicates strong long-term financial sustainability. In the study, financial self-sufficiency was used as a measure representing financial sustainability (Wondimu, 2022).

Financial sustainability ratio = Adjusted financial revenue / Adjusted total expense.

CHAPTER-IV

RESULT AND DISCUSSION

This chapter presents and explains the findings of the statistical analysis of the data. It systematically shows and analyzes secondary data to address factors that affect the financial viability of MFIs in Nepal. To identify the factors that determine sustainability, the research includes descriptive statistics, multiple regression, and Pearson correlation of various MFIs in Nepal. The main goal of this chapter is to highlight the factors that influence microfinance sustainability in developing countries like Nepal. The analysis uses data from the past ten years.

4.1 Descriptive Analysis

Table 3 presents the descriptive statistics for the variables in the analysis, including means, standard deviations, and the minimum and maximum values. The independent variables operating expenses ratio (OER), number of active borrowers (NAB), return on assets (ROA), return on equity (ROE), age of MFIs (AGE), and debt-to-equity ratio (DER)—are examined for their impact on the financial sustainability (FSS) of MFIs in Nepal from fiscal years 2013/14 to 2022/23. This statistical overview provides insight into the data distribution and variability, essential for understanding the relationships and dynamics explored in the analysis.

Table 3

Descriptive statistics for dependent and Independent Variable

Variables	Mean	SD	Min.	Max.
FSS	1.35	0.2226	0.76	1.74
OER	12.15	2.2366	5	18
NAB	104542.6	80146.53	3474	261703
ROA	2.5	1.2889	-1	4.48
ROE	21.69	11.3864	-5	53
AGE	12.75	6.2998	2	25
DER	4.22	2.1857	0.49	11.52

Table 3 presents descriptive statistics for the variables used in the financial sustainability analysis of 8 MFIs from 2013/14 to 2022/23. It includes the means, standard deviations, minimum, and maximum values for each variable.

An MFI's capacity to cover all its operational expenses and capital costs without relying on external funding is measured by its financial sustainability (FSS). The mean FSS of 1.35, as seen in Table 4.1, indicates that, on average, MFIs are financially self-sufficient. However, there is significant variability in the sustainability of the microfinance institutions under study, as evidenced by a standard deviation of 0.2226.

An operating expenses ratio (OER) is calculated by dividing operating expenses by the gross loan portfolio. Table 4.1 shows that the mean OER is 12.15%, indicating that, on average, 12.15% of the gross loan portfolio is consumed by operating expenses. There is significant variability in OER among the MFIs, with a standard deviation of 2.2366. This indicates that while some MFIs are more efficient with lower operating expenses, others have much higher operating costs. The wide range of OER values, from a minimum of 5% to a maximum of 18%, further highlights the differences in operational efficiency across the institutions.

The number of active borrowers (NAB) is a key metric for assessing the reach and impact of MFIs. Table 4.1 indicates that the mean NAB is 104,542.6, demonstrating that, on average, each MFI serves about 104,543 borrowers. However, there is substantial variability in the number of active borrowers, with a standard deviation of 80,146.53. This wide variation indicates that while some MFIs serve a relatively small number of borrowers, others have a significantly larger client base. The range of NAB values, from a minimum of 3,474 to a maximum of 261,703, underscores the diverse scale of operations among the institutions studied.

Return on Assets (ROA) measures the profitability of MFIs relative to their total assets. The mean ROA is 2.5%, indicating moderate profitability on average. The standard deviation of 1.2889 suggests considerable variability in profitability among the MFIs. The ROA ranges from a minimum of -1% to a maximum of 4.48%, showing that while some MFIs experience losses on some years.

Return on Equity (ROE) assesses the profitability of MFIs relative to their shareholders' equity. The mean ROE is 21.69%, reflecting strong returns on average. However, there is high variability, as indicated by a standard deviation of 11.3864. The ROE ranges from a

minimum of -5% to a maximum of 53%, highlighting the diversity in financial performance.

The age of MFIs represents the number of years they have been in operation. The mean age is 12.75 years, suggesting a mix of both new and established institutions. The standard deviation of 6.2998 indicates moderate variability in age. The age ranges from a minimum of 2 years to a maximum of 25 years, reflecting a dynamic sector with both experienced and emerging players.

The Debt-to-Equity Ratio (DER) measures the level of an MFI's debt relative to its equity. The mean DER is 4.22, indicating that, on average, MFIs have a relatively high level of debt compared to their equity. The standard deviation of 2.1857 suggests significant variability in leverage levels among the MFIs. The DER ranges from a minimum of 0.49 to a maximum of 11.52, showing that some MFIs have low leverage while others are highly leveraged.

4.2 Correlation Analysis

Correlation analysis is a statistical technique used to determine how strongly two continuous numerical variables are related. For example, it can assess the relationship between height and weight. This method helps researchers understand whether and how changes in one variable might be associated with changes in another. The Pearson Correlation Coefficient is the most commonly used tool for this analysis. It quantifies the degree and direction of the linear relationship between the two variables, providing a value between -1 and 1. A value close to 1 indicates a strong positive relationship (as one variable increases, the other also tends to increase), while a value close to -1 indicates a strong negative relationship (as one variable increases, the other tends to decrease). A value around 0 suggests little to no linear relationship between the variables. By using correlation analysis, researchers can uncover patterns and connections in their data, which can inform further investigations and help in drawing meaningful conclusions about the relationships between variables.

Table 4

Correlations Analysis

		FSS	OER	NAB	ROA	ROE	AGE	DER
FSS	Pearson Correlation	1						
	Sig. (2-tailed)							
OER	Pearson Correlation	-.574**	1					
	Sig. (2-tailed)	<.001						
NAB	Pearson Correlation	.262*	.026	1				
	Sig. (2-tailed)	.019	.820					
ROA	Pearson Correlation	.833**	-.514**	.313**	1			
	Sig. (2-tailed)	<.001	<.001	.005				
ROE	Pearson Correlation	.725**	-.346**	.230*	.847**	1		
	Sig. (2-tailed)	<.001	.002	.040	<.001			
AGE	Pearson Correlation	.055	.075	.860**	.176	.093	1	
	Sig. (2-tailed)	.630	.506	<.001	.119	.410		
DER	Pearson Correlation	.037	-.100	-.577**	.051	.361**	-.563**	1
	Sig. (2-tailed)	.745	.377	<.001	.652	.001	<.001	

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

*. Correlation is significant at the 0.05 level (2-tailed).

In above table 4, we delve into the correlation matrix provided, examining the relationships between various economic variables, including FSS, OER, NAB, ROA, ROE, AGE, and DER. Understanding these relationships is crucial for comprehending how different economic factors interact and influence FSS.

There is a moderate negative correlation of -0.574 between FSS and OER. This means that as operating expenses increase, financial self-sufficiency tends to decrease. This relationship is significant at the 0.01 level, indicating a meaningful association.

The correlation between FSS and NAB is 0.262, which is a weak positive relationship. This suggests a slight association where an increase in the number of active borrowers may be linked to higher financial self-sufficiency. This correlation is significant at the 0.05 level, though the relationship is not very strong.

There is a very strong positive correlation of 0.833 between FSS and ROA. This indicates that higher financial self-sufficiency is strongly associated with higher returns on assets. This correlation is significant at the 0.01 level, highlighting a strong and important relationship.

The correlation between FSS and ROE is 0.725, showing a strong positive relationship. This suggests that higher financial self-sufficiency is linked to higher returns on equity. This relationship is also significant at the 0.01 level, indicating a robust and meaningful connection.

The correlation of 0.055 between FSS and AGE is very weak, suggesting that the age of an MFI has little effect on its financial self-sufficiency. This relationship is not statistically significant.

There is a very weak positive correlation of 0.037 between FSS and DER, indicating minimal association. This correlation is not statistically significant, suggesting that the debt-to-equity ratio does not have a meaningful impact on financial self-sufficiency.

Financial Self-Sufficiency (FSS) is strongly positively correlated with Return on Assets (ROA) and Return on Equity (ROE), reflecting that better profitability is associated with higher self-sufficiency. It also has a weak but significant positive relationship with the Number of Active Borrowers (NAB). Conversely, there is a strong negative correlation with Operating Expenses Ratio (OER), meaning higher expenses are linked to lower self-sufficiency. The correlations with Age of MFIs (AGE) and Debt to Equity Ratio (DER) are

very weak and not statistically significant, indicating minimal impact on financial self-sufficiency.

4.3 Regression Analysis

Regression analysis is a statistical technique used to explore and quantify the relationship between a dependent variable and one or more independent variables. It helps to determine how changes in the independent variables are associated with changes in the dependent variable, allowing researchers to make predictions and understand underlying patterns in the data. Linear multiple regression is a specific type of regression analysis that examines the relationship between a dependent variable and two or more independent variables.

Table 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877[a]	.770	.751	.11183

a. Predictors: (Constant), DER, ROA, OER, AGE, NAB, ROE

The regression model, which analyzes the relationship between Financial Self-Sufficiency (FSS) and various independent variables (Operating Expenses Ratio, Number of Active Borrowers, Return on Assets, Return on Equity, Age of MFIs, and Debt to Equity Ratio), shows a strong overall fit. The R value of 0.877 indicates a high level of correlation between the predicted and actual FSS values. The R Square value of 0.770 means that 77% of the variability in FSS can be explained by the independent variables in the model. The Adjusted R Square of 0.751 confirms that, after accounting for the number of predictors, the model still explains a significant portion of the variability in FSS. The Standard Error of the Estimate is 0.11183, suggesting that the predictions are close to the actual FSS values with only a small average deviation. Overall, the model effectively captures the relationship between FSS and its predictors, providing reliable insights into financial self-sufficiency.

Table 6

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.050	6	.508	40.653	<.001[b]
	Residual	.913	73	.013		
	Total	3.963	79			

a. Dependent Variable: FSS

b. Predictors: (Constant), DER, ROA, OER, AGE, NAB, ROE

Table 6 presents the results of the ANOVA test for the regression model analyzing Financial Self-Sufficiency (FSS) with predictors including Debt to Equity Ratio (DER), Return on Assets (ROA), Operating Expenses Ratio (OER), Age of MFIs (AGE), Number of Active Borrowers (NAB), and Return on Equity (ROE). The regression model has a Sum of Squares of 3.050, which reflects the variation explained by the model. The Residual Sum of Squares is 0.913, indicating the variation not explained by the model. The Total Sum of Squares is 3.963, representing the total variation in FSS. The F-value is 40.653 with a significance level less than 0.001, which means the model is statistically significant and effectively explains the variation in FSS. In summary, the ANOVA results confirm that the model is a good fit and the predictors collectively have a significant impact on Financial Self-Sufficiency.

Table 7

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.460	.118		12.359	<.001
	OER	-.023	.007	-.236	-3.404	.001
	NAB	8.289E-7	.000	.298	2.300	.024
	ROA	.081	.025	.466	3.227	.002
	ROE	.005	.003	.266	1.713	.091
	AGE	-.013	.004	-.373	-3.299	.002
	DER	-.015	.011	-.145	-1.395	.167

a. Dependent Variable: FSS

Table 7 presents the coefficients from a linear regression analysis used to understand the factors affecting Financial Self-Sufficiency (FSS) among microfinance institutions (MFIs). The regression model includes several predictors: Operating Expenses Ratio (OER), Number of Active Borrowers (NAB), Return on Assets (ROA), Return on Equity (ROE), Age of MFIs (AGE), and Debt to Equity Ratio (DER). Each coefficient represents the estimated impact of these predictors on FSS.

The constant value is 1.460, which estimates the Financial Self-Sufficiency (FSS) when all the predictors (like Operating Expenses Ratio, Number of Active Borrowers, Return on Assets, Return on Equity, Age of MFIs, and Debt to Equity Ratio) are zero. This value is highly significant ($p < 0.001$), meaning it's a reliable starting point for predicting FSS in this model.

The coefficient for OER is -0.023, meaning that as operating expenses go up, FSS tends to go down a bit. This impact is statistically significant with a p-value of 0.001, indicating that the negative effect of higher operating expenses on FSS is strong and meaningful.

The coefficient for NAB is 8.289E-7, which shows a very small positive effect on FSS. This means that more active borrowers are linked to a slight increase in FSS. This result is statistically significant (p = 0.024), suggesting that having more active borrowers can positively impact FSS, although the effect is small.

The coefficient for ROA is 0.081, indicating a positive impact on FSS. This means that higher returns on assets are associated with higher FSS. The p-value of 0.002 shows this effect is statistically significant, meaning ROA has a notable positive effect on FSS.

The coefficient for ROE is 0.005, which shows a small positive effect on FSS. However, this result is not statistically significant (p = 0.091), suggesting that ROE might not have a strong or reliable impact on FSS in this model.

The coefficient for AGE is -0.013, meaning that as MFIs get older, their FSS tends to decrease slightly. This relationship is statistically significant with a p-value of 0.002, indicating that the age of MFIs has a significant negative effect on their FSS.

The coefficient for DER is -0.015, suggesting a small negative effect on FSS. Higher debt to equity ratios is associated with a slight decrease in FSS. This result is not statistically significant (p = 0.167). So DER has no significant impact on FSS, meaning DER may not be a strong predictor of FSS in this model.

4.4 Discussion

This study aimed to explore the relationship between various financial and operational variables and the financial sustainability (FSS) of microfinance institutions (MFIs) in Nepal from fiscal years 2013/14 to 2022/23. Specifically, the objectives were to examine the relationships and analyze the effects of the operating expense ratio (OER), number of active borrowers (NAB), return on assets (ROA), return on equity (ROE), age of MFIs (AGE), and debt-to-equity ratio (DER) on the financial sustainability of MFIs.

The regression analysis revealed that the operating expense ratio (OER) and return on assets (ROA) are significant predictors of financial self-sufficiency (FSS) in MFIs. Higher operating expenses were significantly associated with lower financial self-sufficiency, while higher returns on assets were significantly associated with greater financial self-sufficiency. The number of active borrowers (NAB) had a small but significant positive effect on FSS. Conversely, the age of MFIs had a significant negative effect, indicating that

older MFIs tend to have lower financial self-sufficiency. The debt-to-equity ratio (DER) and return on equity (ROE) did not have statistically significant impacts on FSS.

The study showed that a higher operating expenses ratio negatively impacts financial self-sufficiency, which aligns with the existing literature. Yayehyirad (2023) in Ethiopia, Subedi and Karki (2022) in Nepal, Chaudhari et al. (2022) in Bangladesh, Perera (2021) in Sri Lanka, Abdulhakim and Mersha (2020) in Ethiopia, and Rai and Rai (2012) in both India and Bangladesh reported similar results, suggesting that controlling operating costs is critical for maintaining financial sustainability. However, Dev (2017) showed inconsistent results with a study on the positive impact in Bangladesh, indicating regional differences in how operating expenses affect MFIs. This study's finding that operating expenses have a statistically significant negative impact on financial self-sufficiency in Nepal corroborates the majority of the existing literature.

The study showed that the Number of Active Borrowers (NAB) has a positive impact on Financial Self-Sufficiency (FSS), which aligns with the existing literature. Maeenuddin et al. (2023) in Bangladesh, Luft and Twaha (2019) in East Africa, and Ahmed et al. (2016) in South Asia reported similar results, suggesting that having more borrowers enhances financial sustainability by increasing revenue and diversifying risk. However, Hamid et al. (2024) showed a negative effect in India, indicating that more borrowers can strain financial resources, and Rahman and Mazlan (2014) showed a negative relationship in Bangladesh. Rai and Rai (2012) showed significant positive impacts in India but insignificant effects in Bangladesh, while Tehula (2013) showed no significant impact in East Africa, suggesting regional differences. This study's finding that the number of active borrowers positively impacts financial self-sufficiency in Nepal corroborates the majority of the existing literature.

The study showed that Return on Assets (ROA) has a positive and significant effect on Financial Self-Sufficiency (FSS), highlighting how important effective asset management is for the financial health of MFIs. This is consistent with the findings of Dev (2017) and Luft and Twaha (2019), which both showed a significant positive impact of ROA on FSS. Bhuiyan et al. (2023) and Pravin et al. (2020) also showed a positive effect but did not specify whether it was significant. Together, these studies emphasize that using assets efficiently is crucial for improving financial self-sufficiency.

The study showed that Return on Equity (ROE) has a strong positive correlation with Financial Self-Sufficiency (FSS), but its impact was only weakly significant at the 10%

level in the regression analysis. This indicates that ROE is a less robust predictor of FSS in this context. Previous research showed mixed results: Luft and Twaha (2019) and Dev (2017) showed significant positive impacts of ROE on FSS, while Rai and Rai (2012) showed weaker or insignificant effects. These varying results highlight that the influence of ROE on financial self-sufficiency can differ depending on the study and context.

The study showed that age negatively and significantly impacts Financial Self-Sufficiency (FSS), suggesting that older MFIs might have difficulties maintaining financial sustainability. This finding aligns with Ahmed et al. (2016) and Bogan et al. (2007), who both showed a negative significant effect. However, it contrasts with Perera (2021), which showed a positive impact, and with studies like Chaudhari et al. (2022), LE et al. (2020), Hossain and Khan (2016) in Bangladesh, and Tafesse (2014) in Ethiopia, all of which found no significant impact. Rahman and Mazlan (2014) showed a negative impact as well. These differences highlight that the relationship between age and FSS can vary depending on regional and institutional factors.

The study showed that Debt-to-Equity Ratio (DER) has an insignificant effect on Financial Self-Sufficiency (FSS) in Nepal, suggesting that debt levels do not strongly influence financial sustainability for MFIs in this context. This finding is consistent with Kuwar (2022) in Nepal and Ahmed et al. (2016) in Pakistan, both of which reported an insignificant impact of DER. However, Dev (2017) and Rahman and Mazlan (2014) showed significant negative impacts of DER on FSS, indicating that higher debt levels can reduce financial self-sufficiency. Rai and Rai (2012) showed an insignificant positive impact in India and Bangladesh, while Hossain and Khan (2016) study showed no significant impact in Bangladesh. Overall, although some studies report significant effects, the majority find that DER's impact on FSS is insignificant.

This study has several limitations. First, it includes data from only eight MFIs, which may not be representative of the broader MFI landscape in Nepal. The reliance on secondary data limits the depth of insights compared to primary data collection. Additionally, the study's scope was constrained by the availability of data, as not all microfinance organizations in Nepal were included. The limited number of variables considered, such as OER, NAB, ROA, ROE, AGE, and DER, means other potentially significant factors were not analyzed. Finally, while this study aligns with existing literature, interpretations may be influenced by the perspectives of cited authors.

CHAPTER-V

SUMMARY AND CONCLUSION

5.1 Summary

This study aims to examine the relationship between the operating expense ratio (OER), number of active borrowers (NAB), return on assets (ROA), return on equity (ROE), age of MFIs, and debt-to-equity ratio (DER) and the financial sustainability of microfinance institutions (MFIs) in Nepal. It also analyzes the effect of these variables on the financial sustainability of MFIs in Nepal. This was accomplished by reviewing relevant literature, including theoretical concepts, models of MFIs, the legal status of MFIs, and identifying research gaps.

To address the specific objectives of the study, both descriptive and causal comparison methods were utilized. Data were collected from eight MFIs selected using a purposive sampling method, using their annual reports and the Nepal Rastra Bank (NRB) MFIs supervision report of relevant years over a 10-year period, from 2013–2014 to 2022–2023. The data were analyzed using the Statistical Package for Social Science (SPSS) and MS Excel. Descriptive correlation and linear multiple regression methods were employed to analyze the data.

The mean Financial Sustainability (FSS) of 1.35 indicates MFIs are generally self-sufficient. The Operating Expenses Ratio (OER) is 12.15%, showing that 12.15% of the gross loan portfolio is consumed by operating expenses. The Number of Active Borrowers (NAB) averages 104,543, highlighting the reach of MFIs. Return on Assets (ROA) is 2.5%, indicating moderate profitability, while Return on Equity (ROE) is 21.69%, reflecting strong returns. The average age of MFIs is 12.75 years, and the Debt-to-Equity Ratio (DER) is 4.22, showing significant variability in leverage.

Correlation analysis reveals that financial self-sufficiency (FSS) is strongly negatively correlated with OER (-0.574) and strongly positively correlated with ROA (0.833) and ROE (0.725). Weak but significant positive correlations exist between FSS and NAB (0.262). The relationships with AGE and DER are very weak and not statistically significant. The regression model indicates that 77% of the variability in FSS can be explained by the independent variables, with an R value of 0.877. The coefficients suggest that OER has a significant negative impact on FSS, while ROA has a significant positive

effect. NAB has a slight positive impact, and AGE has a significant negative effect. ROE and DER show minimal impact on FSS. Overall, the findings highlight the importance of operational efficiency, asset returns, and the number of active borrowers in determining the financial sustainability of MFIs in Nepal.

This study examines the relationship between various financial and operational metrics and the financial sustainability of microfinance institutions (MFIs) in Nepal, utilizing data from eight MFIs over a 10-year period. Key findings indicate that financial sustainability (FSS) is generally achieved among these MFIs. The analysis reveals that operating expense ratio (OER) negatively impacts FSS, while return on assets (ROA) and return on equity (ROE) positively influence it. The number of active borrowers (NAB) also contributes positively, though to a lesser extent, whereas the age of MFIs shows a negative effect. Debt-to-equity ratio (DER) has minimal impact. Overall, the study underscores the significance of operational efficiency, asset returns, and borrower outreach in determining the financial sustainability of MFIs in Nepal.

5.2 Conclusion

This study provides a detailed examination of the financial self-sufficiency (FSS) of microfinance institutions (MFIs) in Nepal from 2013/14 to 2022/23. The analysis highlights key factors influencing FSS, including operating expenses, returns on assets, and the number of active borrowers. The findings underscore the importance of these variables in shaping the financial stability and sustainability of MFIs in Nepal, offering valuable insights into the sector's performance and areas for potential improvement.

The study highlights a significant negative correlation between the operating expenses ratio (OER) and financial self-sufficiency (FSS). This finding indicates that as operating expenses increase, the financial self-sufficiency of microfinance institutions (MFIs) tends to decrease. The strong statistical significance of this relationship underscores the importance of managing operating costs effectively to sustain financial health.

Returns on assets (ROA) demonstrate a very strong positive correlation with financial self-sufficiency. This means that higher returns on assets are strongly associated with greater financial self-sufficiency. The statistical significance of this relationship emphasizes that improving asset profitability is a key factor in enhancing the financial stability of MFIs.

The number of active borrowers (NAB) has a small but significant positive effect on financial self-sufficiency. Although the impact is relatively minor, it still contributes positively to financial self-sufficiency. This suggests that increasing the number of active borrowers can have a beneficial, albeit limited, effect on the financial stability of MFIs.

The age of microfinance institutions (MFIs) is negatively associated with financial self-sufficiency, though the effect is weak. Older MFIs tend to experience lower financial self-sufficiency, which may reflect challenges related to aging institutions. This relationship is statistically significant, indicating that the age of MFIs plays a role in their financial health, though the impact is not very strong.

Returns on equity (ROE) show a small positive correlation with financial self-sufficiency, but this relationship is not statistically significant. This suggests that while there may be a minor association between ROE and FSS, it is not strong enough to be considered a reliable predictor of financial self-sufficiency in this model.

The debt-to-equity ratio (DER) exhibits a slight negative correlation with financial self-sufficiency, but this relationship is not statistically significant. The minimal impact of DER on FSS suggests that variations in the debt-to-equity ratio do not substantially affect the financial self-sufficiency of MFIs, indicating that other factors might be more critical for financial stability.

5.3 Implication

The study's findings hold significant policy implications for academics, decision-makers, and microfinance institutions (MFIs) in Nepal, given the early stage of microfinance development in the country. As one of the initial investigations into this field, the research offers a foundational understanding of the factors affecting the financial self-sufficiency (FSS) of MFIs, focusing on key variables such as operating expenses, returns on assets, and the age of institutions. These insights could guide future research and policy development. While the study highlights the significant impact of these variables on FSS, it also notes that factors like the debt-to-equity ratio and returns on equity show mixed or insignificant results. Expanding research to include a broader range of MFIs and other financial institutions could enhance the understanding of sustainability and inform more effective policies.

For policymakers and regulators, this study underscores the need to develop targeted policies that address the unique challenges faced by MFIs in Nepal. Specifically, it suggests focusing on managing operating expenses and enhancing returns on assets to improve financial self-sufficiency. Regulators could consider creating tailored policies that support MFIs in these areas, while also promoting effective financial management practices.

Academics and future researchers are encouraged to expand the scope of study beyond the current sample. This includes exploring a broader range of microfinance institutions and other financial entities, such as cooperatives. Future research could also incorporate additional variables, including geographic location, growth stages, macroeconomic variables, liquidity, and product delivery strategies, to gain a more comprehensive understanding of factors affecting sustainability.

The study also challenges some theoretical expectations, particularly the notion that a larger number of borrowers necessarily ensures greater sustainability. Instead, it suggests that focusing on key operational factors may be more crucial for achieving financial self-sufficiency.

Overall, this study contributes to the growing body of knowledge on microfinance sustainability in Nepal and offers valuable insights for improving the effectiveness of MFIs. By addressing the identified variables and incorporating broader research perspectives, future studies can further advance our understanding of microfinance sustainability and support the development of more robust financial systems in Nepal.

Reference

Abdulhakim, N. (2020). Determinants of financial sustainability of microfinance institutions in Ethiopia. *Horn of African Journal of Business and Economics (HAJBE)*, *3*(2), 47-59.

Ahlin, C., Lin, J., & Maio, M. (2011). Where does microfinance flourish? Microfinance institution performance in macroeconomic context. *Journal of Development economics*, *95*(2), 105-120.

Ahmed, I., Bhuiyan, A. B., Ibrahim, Y., & Said, J. (2016). Profitability and accountability of South Asian microfinance institutions (MFIs). *Journal of Scientific Research and Development*.

Ahmed, S., Mehmood, T., & Haq, N. U. (2016) Determinants of Financial Sustainability of Microfinance Institutions in Pakistan Muhammad Usman.

Berhe, K. (2018). *Determinants of Financial Sustainability of Mfis in Ethiopia* (Doctoral Dissertation, St. Mary's University).

Berhanu, A. (2016). *Determinants of Financial Sustainability of Mfis in Ethiopia* (Doctoral Dissertation).

Brealey, R. A., Myers, S. C., & Allen, F. (2008). Brealey, Myers, and Allen on real options. *Journal of Applied Corporate Finance*, *20*(4), 58-71.

Blavy, M. R., Yulek, M. M. Â., & Basu, M. A. (2004). *Microfinance in Africa: Experience and lessons from selected African countries*. International Monetary Fund.

Bhuiyan, A. B., Said, J., Kassim, A. A. M., Munir, A. N., & Ali, M. J. (2023). Sustainability of Microfinance Institutions in The Philippines. *Journal of Nusantara Studies (JONUS)*, *8*(3), 43-61.

Bogan, V. L. (2012). Capital structure and sustainability: An empirical study of microfinance institutions. *Review of Economics and statistics*, *94*(4), 1045-1058.

Bogan, V., Johnson, W., & Mhlanga, N. (2007). Does Capital Structure affect the financial sustainability of Microfinance Institutions. *Retrieved on*, *7*(04), 2013.

Bourke, P. (1989). Concentration and other determinants of bank profitability in Europe, North America and Australia. *Journal of banking & Finance*, *13*(1), 65-79.

Helms, Brigit S.; Malhotra, Mohini. (2003) *Anatomy of a microfinance deal: the new approach to investing in microfinance institutions (English).* CGAP focus note; no. 9 Washington, D.C.: World Bank Group.

CGAP. (2010). Sub Saharan Africa 2009: Microfinance Analysis and Benchmark report. Microfinance Information Exchange. Available at www.themix.org. [Accessed: July 2015.

Chaudhury, N. J., Alam, M. M., & Dooty, E. N. (2022). Operational Self Sufficiency of Bangladeshi Micro Finance Institutions: Do the Managerial Factors Matter? *The Journal of Developing Areas*, *56*(1), 233-248.

De Crombrugghe, A., Tenikue, M., & Sureda, J. (2008). Performance analysis for a sample of microfinance institutions in India. *Annals of public and cooperative economics*, *79*(2), 269-299.

D'espallier, B., Guerin, I., & Mersland, R. (2013). Focus on women in microfinance institutions. *The Journal of Development Studies*, *49*(5), 589-608.

Da, H. T. T., Dung, D. T., & Hai, T. N. M. (2019). Financial Sustainability of Microfinance Institutions in Viet Nam. *Asian Journal for Poverty Studies (AJPS)*, *5*(2), 57-65.

Deb, J. (2017). Assessing sustainability and its determinants of microfinance institutions in India. *International Journal of Banking, Risk & Insurance*, *5*(1), 1-9.

Dhakal, N. H. (2012). Portfolio and delinquency management in microfinance institutions. *Lalitpur: Center for Empowerment*.

Duwal, B. R. (2018). *Sustainable development of Nepalese microfinance institutions* (Doctoral dissertation).

Elias, T. (2020). *Detremnents of Operational and Financial Sustainability of the Micro Finance Institutions (Mfis) in Ethiopia* (Doctoral Dissertation, St. Mary's University).

Gautam, J. (2023). Evolution of Microfinance and Its Relevance in Nepal. *Parroha Multiple Campus*.

Hamid, S. A., Nassir, A. M., Fahlevi, M., Aljuaid, M., & Jermsittiparsert, K. (2024). Nexus between good governance and financial sustainability: evidence from microfinance sector of India. *Journal of Financial Economic Policy*.

Helms, B. (2006). *Access for all: Building inclusive financial systems*. World Bank Publications.

Allen, R. S., & Helms, M. M. (2006). Linking strategic practices and organizational performance to Porter's generic strategies. *Business process management journal*, *12*(4), 433-454.

Hossain, M. S., & Khan, M. A. (2016). Financial sustainability of microfinance institutions (MFIs) of Bangladesh. *Developing Country Studies*, *6*(6), 69-78.

Kimando, L., Kihoro, J. M. D., & Njogu, G. W. M. (2012). Factors influencing the sustainability of micro-finance institutions in Murang'a Municipality.

Kunwar, S. (2022) *Financial Sustainability of Microfinance Institutions in Nepal*. (Doctoral dissertation).

Le, T. T., Dao, L. P., Do, N. M., Truong, T. H. L., Nguyen, T. T. D., & Tran, C. T. (2020). Determinants of operational self-sustainability of microfinance institutions in Vietnam. *The Journal of Asian Finance, Economics and Business*, *7*(10), 183-192.

Ledgerwood, J. (1998). *Microfinance handbook: An institutional and financial perspective*. World Bank Publications.

Lutf, L., & Twaha, K. (2019). An assessment of the financial sustainability of microfinance institutions. *Kardan Journal of Economics and Management Sciences*, *2*(1), 48-73.

Meyer, R. L. (2002). *Track record of financial institutions in assisting the poor in Asia* (No. 49). ADBI Research Paper Series.

Woldeyes, M. T. (2012). Determinants of Operational and Financial Self-Sufficiency: An Empirical Evidence of Ethiopian Microfinance Institutions. *Addis Ababa University*.

Memon, A., Akram, W., Abbas, G., Chandio, A. A., Adeel, S., & Yasmin, I. (2022). Financial sustainability of microfinance institutions and macroeconomic factors: a case of South Asia. *South Asian Journal of Macroeconomics and Public Finance*, *11*(1), 116-142.

Nader, Y. F. (2008). Microcredit and the socio-economic wellbeing of women and their families in Cairo. *The Journal of Socio-Economics*, *37*(2), 644-656.

Bank, N. R. (2012). Monetary Policy for fiscal year 2011/12. *Central Bank Report. Kathmandu: NRB*.

Nyamsogoro, G. D. (2010). *Financial sustainability of rural microfinance institutions (MFIs) in Tanzania* (Doctoral dissertation, University of Greenwich).

Oli, S. K. (2018). Impact of microfinance institutions on economic growth of Nepal. *Asian Journal of Economic Modelling*, *6*(2), 98-109.

Parvin, S. S., Hossain, B., Mohiuddin, M., & Cao, Q. (2020). Capital structure, financial performance, and sustainability of micro-finance institutions (MFIs) in Bangladesh. *Sustainability*, *12*(15), 6222.

Perera, H. S. C. (2021). Determinants of financial sustainability of the microfinance institutions in Sri Lanka. *Kelaniya Journal of Management*, *10*(2), 91.

Pissarides, F., Nussambaumer, M., & Gray, C. (2005). Sustainability of microfinance banks: the ultimate goal.

Rahman, M. A., & Mazlan, A. R. (2014). Determinants of financial sustainability of microfinance institutions in Bangladesh. *International Journal of Economics and Finance*, *6*(9), 107-116.

Rahman, M. W., & Luo, J. (2012). Sustainability of NGO-type microfinance service provider in Shaanxi, China: Peer with Grameen Bank, Bangladesh. *African Journal of Business Management*, *6*(15), 5319.

Rai, A. K., & Rai, S. (2012). Factors affecting financial sustainability of microfinance institutions. *Journal of Economics and Sustainable Development*, *3*(6), 1-9.

Rani, (2015). *Financial sustainability of microfinance institution an empirical study* [doctoral dissertation, Kurukshetra university, India].

Robinson, M. S. (2001). The microfinance revolution: Sustainable finance for the poor. *The World Bank and Open Society Institute*.

Salifu, I., Mahama, M., & Dawuni, M. M. (2019). Evaluation of factors influencing the sustainability and outreach of microfinance institutions in northern Ghana. *Evaluation*, *10*(16).

Shrestha, S. M. (2009). State of microfinance in Nepal. As part of the project on state of microfinance in SAARC countries. *Institute of Microfinance (InM). Retrieved March*, *11*, 2012.

Singh, J., & Yadav, P. (2012). Micro finance as a tool for financial inclusion & reduction of poverty. *Journal of Business Management & Social Sciences Research (JBM&SSR)*, *1*(1), 1-12.

Subedi, S., & Karki, D. (2022). Outreach, Sustainability and Efficiency of Microfinance Institutions in Nepal. *Bhutan Journal of Business and Management*.

Tafesse, A. (2014). *Internal Detremnents of Operational and Financial Sustainability of the Micro Finance Institutions (MFIs) In Ethiopia* (Doctoral Dissertation, St. Mary's University).

Tehulu, T. A. (2013). Determinants of financial sustainability of microfinance institutions in East Africa. *European Journal of Business and Management*, *5*(17), 152-158.

Woldeyes, M. T. (2012). Determinants of Operational and Financial Self-Sufficiency: An Empirical Evidence of Ethiopian Microfinance Institutions. *Addis Ababa University*.

Woller, G., & Schreiner, M. (2002). Poverty lending, financial self-sufficiency, and the six aspects of outreach. *Disc. Paper, Ohio*.

Wondimu, A. (2022). *Determinants of Financial Sustainability of Microfinance Institutions in Ethiopia* (Doctoral Dissertation, St. Mary's University).

Yayehyirad, Y. A. (2012) Determinants of Financial and Operational Sustainability of Selected Micro Finance Institutions in Ethiopia.

Berhanu, A. (2016). *Determinants of Financial Sustainability of MFIs in Ethiopia* (Doctoral dissertation).

Yayehyirad, Y. A. (2023) Determinants of Financial and Operational Sustainability of Selected Micro Finance Institutions in Ethiopia.

Maeenuddin, Hamid, S. A., Fahlevi, M., Nassir, A. M., & Hashim, P. M. (2023). Predictors of microfinance sustainability: Empirical evidence from Bangladesh. *Cogent Economics & Finance*, *11*(1), 2202964.

Appendix

FSS	OER	active borrower	ROA	ROE	AGE	DER
1.52	12	139418	3.84	37.92	16	6.28
1.56	11	161248	3.85	35.94	17	5.64
1.57	10	190826	4	35.71	18	5.41
1.59	12	206224	4.21	38.67	19	4.63
1.44	12	208986	3.26	31.51	20	3.85
1.48	12	223407	3.56	32.73	21	2.91
1.53	14	219136	1.12	10.55	22	2.55
1.63	10	221634	4.48	30.86	23	1.64
1.34	11	242070	2.53	16.21	24	1.36
1.06	12	222309	0.61	3.62	25	0.84
1.42	15	64362	3	53	13	11.52
1.67	10	75092	4	34	14	4.52
1.55	10	84392	4	37	15	4.83
1.57	10	92204	4	26	16	3.12
1.3	11	103440	3	20	17	4.1
1.22	11	130051	3	27	18	4.33
0.76	14	128722	2	16	19	3.67
1.46	9	129787	4	29	20	3.2
1.2	11	136713	3	18	21	2.89
1.11	12	132698	1	4	22	2.83
1.29	14	162394	2.08	28.35	13	4.56
1.48	12	193733	3.15	36.73	14	4.44
1.63	12	208706	3.76	38.86	15	3.12
1.59	12	233657	3.71	38.02	16	2.59
1.5	12	251377	3.41	35.11	17	2.34
1.42	14	255465	3.1	19.49	18	1.17
1.33	15	248036	2.46	16.34	19	0.99
1.44	12	254758	3.83	25.91	20	1.23
1.4	11	261703	2.48	16.29	21	0.82
1.34	13	234928	2.4	15.19	22	0.67

1.07	14	3474	2.35	21	4	5.64
1.48	11	4327	2.98	27	5	6.20
1.45	11	7931	3.21	28	6	5.98
1.3	11	10500	2.31	26	7	7.88
1.14	13	14339	1.50	18	8	9.95
1.14	14	20701	1.89	19	9	7.60
1.09	15	22198	1.02	20	10	5.35
1.2	10	22380	1.73	22	11	6.42
1.1	12	17814	1.26	15	12	4.93
0.77	17	26706	-0.22	-3	13	4.46
1.07	13	9093	0	2	3	2.14
1.31	11	17144	2	14	4	4.35
1.74	9	25633	4	39	5	5.92
1.72	10	34720	4	30	6	3.72
1.37	13	40625	4	31	7	3.97
1.35	13	43579	3	24	8	4.19
1.15	13	43605	1	13	9	3.07
1.31	9	47300	3	29	10	5.62
1.23	12	53065	2	2	11	0.56
0.93	17	45009	-1	-1	12	0.49
1.03	15	4246	0	7	2	5.79
1.32	11	10957	2	22	3	9.02
1.46	10	21245	3	28	4	8.05
1.33	11	35720	2	21	5	6.85
1.14	17	45658	1	14	6	6.71
1.01	15	51910	2	20	7	6.41
1	15	50017	1	9	8	3.25
1.69	10	48693	4	22	9	3.11
1.27	12	43222	2	12	10	2.95
1.06	16	33022	-1	-5	11	2.69
1.18	5	11571	1	4	2	6.02
1.68	8	28901	3	22	3	6.63
1.74	12	30622	4	25	4	4.98

1.54	11	43917	3	26	5	4.74
1.33	13	51835	2	22	6	5.93
1.4	13	65976	3	15	7	2.85
1.36	13	70635	3	15	8	3.26
1.7	7	91366	3	27	9	6.22
1.31	11	107554	2	19	10	5.55
1.05	15	94286	0	2	11	4.52
1.57	12	126247	4	35	13	4.35
1.39	13	132328	3	24	14	3.72
1.41	12	137977	3	26	15	2.89
1.39	12	149028	3	23	16	3.20
1.21	13	150075	2	15	17	2.26
1.63	10	160244	4	25	18	1.69
1.21	18	167355	2	19	19	4.74
1.56	13	155566	4	38	20	5.10
1.17	11	162660	1	10	21	1.87
1.17	14	152955	1	9	22	1.79

(Source: Annual report of selected MFIs and NRB MFIs supervision report)

FACTOR INFLUENCING THE FINANCIAL SUSTAINABILITY...

By: Birendra Bahadur Saud

As of: Aug 13, 2024 9:56:56 AM
18,476 words - 161 matches - 17 sources

Similarity Index
18%

Mode: Summary Report

sources:

576 words / 3% - from 14-Jul-2023 12:00AM
repository.smuc.edu.et

353 words / 2% - from 13-Dec-2023 12:00AM
parrohamc.edu.np

328 words / 2% - Internet from 14-Jan-2023 12:00AM
elibrary.tucl.edu.np

108 words / 1% - Internet from 31-Oct-2022 12:00AM
repository.smuc.edu.et

196 words / 1% - Internet from 24-Oct-2022 12:00AM
etd.aau.edu.et

126 words / 1% - Internet from 27-Sep-2021 12:00AM
etd.aau.edu.et

113 words / 1% - from 17-Apr-2024 12:00AM
etd.aau.edu.et

199 words / 1% - from 11-Apr-2024 12:00AM
financedocbox.com

163 words / 1% - from 02-May-2024 12:00AM
financedocbox.com

157 words / 1% - Internet from 04-Feb-2023 12:00AM
www.forum4researchers.com

130 words / 1% - Internet from 31-Jan-2023 12:00AM
www.slideshare.net

122 words / 1% - Internet from 12-Jan-2023 12:00AM
publishingindia.com