A Thesis on Factors Affecting Repayment Rate of Microfinance Institute's Credit Program in Coastal Area of Bangladesh

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Submitted To:

Department of Finance

University of Dhaka

Supervised By:

Kazi Golam Rabbani Mowla

Assistant Professor

Department of Finance

University of Dhaka

Submitted By:

Hanan Ashrabi

ID: 26-162, Section: A

Department of Finance

University of Dhaka

Date of Submission:

30 January, 2025

Certification from Supervisor

I, Kazi Golam Rabbani Mowla, am very pleased to declare that Hanan Ashrabi, bearing ID 26-162, Department of Finance, Faculty of Business Studies, University of Dhaka has been given with the topic "Factors Affecting Repayment Rate of Microfinance Institute's Credit Program in Coastal Area of Bangladesh" for researching and writing a thesis paper on the subject. She has reviewed relevant literatures and has worked in that institution, as an intern, for 3 months in order to understand the assigned topic and collect relevant data.

I certify that a thesis paper is a unique one and has not been submitted elsewhere previously for publication in any form.

I wish her the best for her endeavors.

Kazi Golam Rabbani Mowla

Assistant Professor

Department of Finance

Faculty of Business Studies

University of Dhaka

Letter of Transmittal

30 January, 2025

Kazi Golam Rabbani Mowla

Assistant Professor

Department of Finance

University of Dhaka

Subject: Submission of Thesis Paper.

Sir,

I am pleased to submit my thesis paper on "Factors Affecting Repayment Rate of Microfinance Institute's Credit Program in Coastal Area of Bangladesh" and my internship experience report. The internship program gave the opportunity to have an insight on the microfinance operation of coastal region such as, Cox's Bazar Region, Bhola Region and Outreach Region under the direct supervision of Microfinance Operation Department of COAST Foundation.

I have studied the microfinance operation data and statements for the recent months of 2024 to come up with the evaluation framework that would give an in-depth look at repayment rate of microfinance operation of coastal region. In order to do so I have resorted to most widely accepted performance measures in microfinance today.

I, sincerely hope that you will find this paper satisfactory. I respectfully submit my thesis paper for your consideration and welcome any questions or discussions regarding its content.

Sincerely Yours

Hanan Ashrabi

ID: 26-162, Section: A

Department of Finance

University of Dhaka

Acknowledgement

It has been a great pleasure for me to take part in this wonderful and amazing opportunity and being able to submit my internship report after working in COAST Foundation, House Name: Metro Melody, House: 13, Road 2, Shyamoli, Dhaka for 3 months. During this period, I have gained practical knowledge regarding Microfinance operations and NGO activities of humanitarian response, policy advocacy and networking.

Internship program is one of the important requirements for the completion of four years BBA program. I have completed my internship in COAST Foundation. In this regard I would like to express my heartiest appreciation to my honorable Kazi Golam Rabbani Mowla, Assistant Professor, Department of Finance, University of Dhaka for his guidance, care and valuable suggestions to prepare this thesis paper.

This paper is being prepared from the data collected on microfinance operation's financial statement, management information system (MIS), and accounting information system (AIS) of January 2024 to December 2024. For further data, I have looked into the literature reviews of previous research papers and text books for theoretical reference.

Last but not the least, I am very grateful to my colleagues in COAST Foundation who have supported me and helped throughout the process. I wish the best to whoever collects this report and is benefited from this.

Executive Summary

This study, utilizing data from COAST Foundation, investigates the key determinants of loan repayment performance among microfinance borrowers in coastal Bangladesh, a region highly vulnerable to climate change impacts. Employing multinomial logistic regression analysis, the research examined the influence of factors such as savings amount, loan amount, borrower level (Ultra-Poor, Moderate Poor, Enterprise), repayment frequency, and exposure to natural disasters on repayment outcomes.

Key findings reveal a significant association between exposure to natural disasters and increased delinquency and default rates. Conversely, borrowers in higher loan amount categories ("Moderate Poor" and "Enterprise") demonstrated lower delinquency and default rates, suggesting stronger business acumen and financial management skills. While some marginal effects were observed for repayment frequency, its impact on repayment performance remained inconclusive.

These findings emphasize the critical importance of understanding the unique challenges faced by microfinance borrowers in coastal Bangladesh, particularly those related to climate change and natural disasters.

This study contributes to a deeper understanding of the factors influencing loan repayment performance in this vulnerable context, providing valuable insights for microfinance institutions and policymakers in designing and implementing more effective and sustainable microfinance programs in coastal Bangladesh.

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Part A: Internship Experience

About COAST Foundation

COAST Foundation [(https://coastbd.net)](https://coastbd.net) originated as a project of an international NGO in 1998, serving the vulnerable communities of Bhola Island, a region notorious for its susceptibility to cyclones. Over time, it evolved into a fully-fledged NGO dedicated to the upliftment of marginalized populations. Recognized for its work, COAST Foundation holds special consultative status with the UN Economic and Social Council and is officially registered with the Bangladesh government.

The foundation envisions a world characterized by equity, justice, and poverty eradication, where human rights and democratic principles are deeply ingrained. Its mission is to drive sustainable and equitable development, particularly in coastal Bangladesh, empowering disadvantaged communities to improve their lives.

COAST Foundation operates in seven regions across Bangladesh, serving a substantial membership base of over 155,970 female microfinance clients. The foundation provides loans ranging from 40,000 to 2 million taka to empower its members. COAST's microfinance program is distinguished by its holistic approach, extending beyond income generation to focus on broader empowerment and social welfare. Committed to transparency, accountability, and professionalism, COAST ensures that its financial services align with the specific needs of local communities and contribute to poverty reduction. The foundation also emphasizes the importance of savings for its members, fostering financial resilience.

COAST Foundation's 2023-2027 strategic plan outlines a comprehensive approach to development in coastal Bangladesh. Key areas of focus include expanding microfinance services, promoting education and climate resilience, and supporting Rohingya refugees. The foundation also aims to strengthen its organizational capacity through digitalization, human resource development, and improved financial management. By collaborating with communities and advocating for policy changes, COAST seeks to create a more equitable and sustainable future for coastal populations.

As of June 30, 2023, COAST Foundation reported total assets of USD 54.04 million, including a capital fund of USD 8.03 million. Its annual budget for the fiscal year 2022-23 totaled USD 140.13 million, primarily allocated to microfinance programs.

Credit Rating Information and Services Limited (CRISL) assigned COAST a long-term rating of 'A' and a short-term rating of 'ST-3'. While the foundation demonstrated strong capital

adequacy, solid management, and robust internal controls, its ratings were tempered by factors such as insufficient debt coverage, declining donation income, and liquidity concerns.

COAST Foundation believes in equitable development and has structured its programs accordingly. Its core programs focus on organizational growth, microfinance, climate adaptation, governance, and technological advancements for coastal communities. Complementing these, non-core programs address education, advocacy, local governance, child marriage prevention, and protection, aiming for a holistic approach to community development.

Internship Experience at COAST Foundation

Since the very end of our undergraduate course classes have finished, I was excited to start my internship opportunity. I was looking for an internship opportunity which was based on the NGO/INGO sector of Bangladesh since I have my plans to be in the sector as an NGO/INGO professional where I can apply my academic knowledge also. Luckily, I got the opportunity to do my internship in COAST Foundation as a Microfinance Intern. It is a fully-fledged NGO dedicated to the upliftment of marginalized populations.

I started my internship on July 24, 2024 with a tenure of 3 months as an intern in the firm's Microfinance department. In the first two weeks, I worked on preparing the induction report of COAST Foundation. Through preparing the induction report, I got to know about COAST Foundation background story, guiding principle and code of conduct, HR policies and challenges, financial framework, Monitoring, Evaluation, Accountability, and Learning (MEAL) System, internal audit procedure, humanitarian response, and policy, advocacy and networking and last but not the least about the core program of COAST which is Microfinance.

In the third weeks, I have visited COAST's Bhola Island region from where COAST Foundation started its journey. I have stayed in the Jinnagar Branch, Charfashion, Bhola Island for one week where I have gained hands-on learning experience about Microfinance operations. I have learned how the credit development officers (CDO) collect the loan installment and savings from the microfinance member, how the CDO input the details of collection of loan installment and savings in the passbook and in the software of COAST. I have also oriented with the work of branch accountant, where I have learned how the branch accountant inputs the data of microfinance operations transaction details in the software and produce debit and credit vouchers, AIS and MIS report along with PKSF and MRA report through the software.

In the fifth week, I have visited COAST's Cox's Bazar region to know the work of branch manager (BM), area manager (AM) and regional program coordinator (RPC). Moreover, I got to learn about how they provide support supervision to the subordinate and how they navigate the field level problem. Along with that, I have brought out challenges such as positional challenges, contextual challenges, political challenges, skill challenges faced by the BM, AM and RPC with a few observations of mine to the Microfinance department of the head office.

Later on, I worked on the monitoring and controlling of the daily Microfinance activities, such as loan installment collection, savings collection, overdue amount, microfinance member and loan application. Beside observing the Microfinance operations, I have observed how the concept of Microfinance helps the rural poor people of our country by giving them loan without any collateral, thus the amount further helps the rural people to create a livelihood for themselves.

My biggest takeaways from the whole internship experience were:

1) Field-Level Experience: Firsthand experience in microfinance operations, including loan disbursement, repayment collection, and savings mobilization.
2) Data Management and Reporting: Learned about data entry, report generation, and the use of software tools to track microfinance activities.
3) Branch Management: Observed the roles and responsibilities of branch managers, area managers, and regional program coordinators in overseeing and supporting field operations.
4) Challenges and Opportunities: Identified key challenges faced by field staff, such as positional, contextual, political, and skill-based challenges, and suggested potential solutions.

Part B: Factors Affecting Repayment Rate of Microfinance Institute's Credit Program in Coastal Area of Bangladesh

Chapter 1: Introduction

Microfinance has emerged as a powerful tool for poverty alleviation and economic empowerment, particularly in developing countries. It involves providing financial services, such as small loans, savings, and insurance, to low-income individuals and micro-enterprises who typically lack access to traditional banking systems. Microfinance institutions (MFIs) play a crucial role in delivering these services, contributing to economic growth, job creation, and poverty reduction. The World Bank noted that microfinance has lifted approximately 5 million people out of poverty in Bangladesh between 2000 and 2020 (World Bank, 2021).

Bangladesh has been a pioneer in microfinance, with Grameen Bank serving as a global model founded by Nobel Laureate Dr. Muhammad Yunus. The country boasts a vibrant microfinance sector, with numerous MFIs operating across different regions. According to the Bangladesh bank, these institutions have significantly impacted the lives of around 30 million of people, particularly women, by providing access to credit and other financial services.

1.1. Background of the study

Coastal areas in Bangladesh are highly vulnerable to the impacts of climate change, facing significant threats such as sea level rise, increased salinity, and frequent natural disasters (cyclones, floods) (Shamsuddoha & Chowdhury, 2007). These challenges, exacerbated by political instability, significantly impact the livelihoods of coastal communities. Sea level rise, for instance, leads to increased salinity intrusion, disrupting agricultural activities and damaging infrastructure (IPCC, 2021). This, in turn, can severely impact the income-generating capacities of borrowers, hindering their ability to repay microfinance loans.

Furthermore, the socio-economic context of coastal communities presents additional challenges. High population density, limited land availability, and unequal land distribution contribute to poverty and vulnerability. A significant portion of the population is landless or has limited access to productive assets, making them highly susceptible to economic shocks.

Understanding the factors affecting the repayment rate of microfinance credit programs in these areas is crucial for the sustainable growth and development of the microfinance sector in coastal regions. This study aims to investigate the factors that influence the repayment rate of microfinance credit programs in coastal areas. By analyzing the ratio performance of these programs and identifying key determinants of success or failure, the study will contribute to a

better understanding of the challenges and opportunities faced by MFIs operating in these vulnerable regions.

1.2.   About Microfinance Institution in Bangladesh

Microfinance Institutions (MFIs) have significantly contributed to the growth of the Rural Financial Market (RFM) in Bangladesh. Microcredit programs (MCPs) are implemented by a diverse range of institutions, including nationalized commercial banks, specialized banks, government organizations, and Non-Governmental Organizations (NGOs) such as BRAC, Proshika, and ASA (Mia, 2016). The MFI sector experienced remarkable growth throughout the 1990s and continues to expand today.

The microfinance landscape in Bangladesh is diverse, with a significant portion of the market concentrated among a few key players. According to Bangladesh Bank, 10 large MFIs and Grameen Bank account for a substantial share of the sector's savings (87%) and outstanding loans (81%). These institutions have empowered millions of people by providing access to credit for various income-generating activities, impacting the lives of an estimated 30 million individuals.

As of October 10, 2011, 599 institutions were licensed by the Microcredit Regulatory Authority (MRA) to operate microcredit programs (Bangladesh Bank, n.d.). However, Grameen Bank operates under the Grameen Bank Ordinance 1983 and is not subject to MRA regulations. The MRA plays a crucial role in overseeing the sector, ensuring responsible lending practices and promoting financial inclusion (Mia, 2016). By addressing the challenges and fostering a conducive environment for responsible microfinance, Bangladesh can continue to leverage this powerful tool for poverty alleviation and economic development.

1.3.   Rationale of the Study

1) Address Critical Challenges: Coastal areas face unique challenges like frequent natural disasters (cyclones, floods), limited infrastructure, and climate change vulnerability. These challenges significantly impact the livelihoods of coastal communities, increasing their vulnerability to poverty.

2) Understand Repayment Performance: Microfinance plays a crucial role in empowering coastal communities, but understanding the factors influencing loan repayment rates in these challenging environments is crucial for the sustainable growth of the microfinance sector.

3) Enhance MFI Operations: The research will provide valuable insights to MFIs operating in coastal areas, enabling them to develop more effective lending strategies, improve risk assessment, and enhance their outreach to vulnerable borrowers.

1.4.   Objective of the Study

1) Investigate the factors influencing the repayment rate of microfinance credit programs in coastal areas of Bangladesh. This includes analyzing the impact of socio-economic characteristics of borrowers, geographical factors, credit program characteristics, and MFI characteristics on repayment performance.
2) Identify the most significant factors affecting repayment rates. This will help prioritize interventions and develop targeted strategies to improve repayment performance and ensure the sustainability of microfinance programs in coastal regions.
3) Provide recommendations for improving the sustainability and outreach of microfinance programs in coastal regions. This will include recommendations for MFIs, policymakers, and other stakeholders.

1.5.   Research Question

The focal point of this study can be represented as:

"What are the key determinants of loan repayment performance and financial sustainability for Microfinance Institutions (MFIs) operating in coastal areas of Bangladesh, considering the unique socio-economic, environmental, and institutional factors prevalent in these regions?"

1.6.   Limitations of the Study

1) Data Availability: Access to comprehensive and reliable data on all relevant variables (socio-economic, environmental, financial) may be limited.
2) Data Quality: The quality of data collected from borrowers may vary, potentially impacting the accuracy and reliability of the findings.
3) Geographical Scope: The study may be limited in its geographical scope, potentially not fully capturing the diversity of coastal areas and the challenges faced by MFIs operating in different regions.
4) Sample Selection Bias: The selection of borrowers for the study may introduce bias, potentially limiting the generalizability of the findings to the broader population.

5) Causality: Establishing causality between certain factors and repayment rates can be challenging due to the complex interplay of various variables.

6) Generalizability: The findings of the study may not be fully generalizable to other contexts, such as other coastal regions in Bangladesh or other countries with similar characteristics.

7) Statistical Significance: Many of the coefficients in the model are not statistically significant, indicating that the model may not fully explain the observed variations in repayment performance.

8) Sample Size: The sample size (100 observations) is relatively small, which can limit the statistical power of the analysis and increase the uncertainty of the results.

9) Model Assumptions: The multinomial logistic regression model assumes that the relationship between the independent variables and the dependent variable is linear. If this assumption is violated, the model's1 results may be biased.

Chapter 2: Literature Review

Microfinance is the act of providing financial services to low-income clients who lack access to traditional banking services. This can include loans, savings accounts, and insurance. Microfinance institutions (MFIs) typically target the working poor, who are often self-employed or run small businesses (Morduch, 1999). The Grameen Bank, founded by Muhammad Yunus in Bangladesh, is one of the most famous MFIs. The Grameen Bank provides loans to groups of women, who are then responsible for repaying the loans together. This group lending model has been shown to be very successful, as it helps to reduce the risk of default (Ghatak, 1999).

While microfinance has demonstrated the potential to alleviate poverty and empower borrowers, the rapid growth of the sector has also raised concerns. From the borrower's perspective, issues such as high interest rates, aggressive loan recovery practices, and the potential for over-indebtedness have been documented (Armendáriz de Aghion & Morduch, 2005). Furthermore, from the perspective of microfinance institutions (MFIs), research suggests that actual repayment rates may be lower than often reported (Chemin, 2006; Morduch, 1999), potentially impacting the financial sustainability of these institutions.

Studies by Diop, Hillenkamp, and Servet (2007) and Jain and Mansuri (2003) emphasize the risk of "loan traps," where borrowers become entangled in a cycle of continuous borrowing to repay existing debts. This research investigates loan repayment pressure experienced by borrowers of microfinance institutions (MFIs) in Bangladesh, focusing on Grameen Bank, BRAC, and ASA. Existing literature highlights the multifaceted nature of loan repayment challenges. Furthermore, research by Dulal, Gingrich, and Stough (2008) and Siwale and Ritchie (2012) underscores the role of rigid repayment schedules, peer pressure, and the behavior of loan officers in creating significant repayment pressure on borrowers in microfinance program of Bangladesh.

The repayment rate of MFIs in Bangladesh depends on various factors, including loan lending systems, innovation and IT, employee motivation, proper management systems, effective risk management techniques, and government regulatory frameworks. While loan lending systems and employee motivation are significant factors, the impact of innovation and IT on MFI performance in Bangladesh requires further investigation (Akhter, 2018).

Pasha and Negese (2014) found that borrower characteristics significantly influenced loan repayment performance in Ethiopian microfinance institutions. Younger borrowers and those with larger families were more likely to default on loans. The research highlighted that regular supervision from loan officers provided valuable guidance and support, ultimately contributing to improved repayment performance.

Ojiako and Ogbukwa (2012) conducted an economic analysis of loan repayment capacity among smallholder cooperative farmers in Yewa North Local Government Area of Ogun State, Nigeria. Their study found that factors such as loan size and farm size positively influenced loan repayment capacity, while household size had a negative impact.

Muturi Phyllis Muthoni (2016) examines the factors contributing to microcredit default within Microfinance Institutions (MFIs) and Financial Intermediaries (FIs) in Kenya. The research found that both borrower characteristics, such as age, gender, and credit history, and business characteristics, such as the type of business, age of the business, and business location, significantly influenced the likelihood of loan default.

Armendariz de Aghion & Morduch (2005) argue that direct monitoring, regular repayment schedules, and the uses of non-refinancing threats are the elements to generate high repayment rates from low-income borrowers without requiring collateral and without using group lending contracts that feature joint liability. Chowdhury (2005) theoretically shows that without sequential financing, group lending may suffer from under-monitoring with borrowers investing in risky projects. The most important factor inciting lending groups to repay is the relative value they attach to access to future credit.

Mersland & Strom (2008) find that MFI tends to choose group lending when its main market is rural, when it prefers female borrowers, and when the average loan amount is small. Sterns (1995) argued that the cause of high level of non-repayment rates is the lender itself not the borrower.

This literature review highlights the multifaceted nature of factors influencing microfinance loan repayment rates. Research across various contexts, including Bangladesh, Ethiopia, Nigeria, and Kenya, consistently emphasizes the importance of borrower characteristics (age, family size, income sources), loan characteristics (size, repayment schedule), and MFI practices (monitoring, group lending, loan officer behavior) in determining repayment outcomes.

Chapter 3: Data & Methodology of the Study

3.1 Research Approach

There are many approaches to do a thorough quantifiable research. Bryman and Bell (2011) from Oxford University Press have commented that there are two ways to conduct research, deductive and inductive approach.

Deductive approach thoroughly reviews existing literature published on the research topic. Objectives are more defined and hypothesis are developed based on the literature review. Later on, the hypotheses are confirmed or refuted by applying different data analysis tools. This approach is better with time as the literature review becomes the backbone of the studies done. The studies adopt the precedents from other papers to build better designed research, one that incorporates the findings of the ones done before. Inductive approach to business research attempts to create new theories by collecting and analyzing empirical data. It is time consuming and prone to leaving big areas untouched simply because the topic is not well researched enough. Salkind (2009) confirmed this feature of the inductive approach makes it more appropriate for seminal studies.

This study follows the deductive approach to benefit from published and well-renowned literature. The author has first understood the topic of this study and then conducted a thorough literature review to understand the existing theory that aids conducting research. The Literature review has been fundamental in further developing the main objectives of the study. Based on the literature a set of data were fixed that were needed to be gathered. After collecting the data from different sources and verifying them by cross matching they were put together for the test this study is based on. The findings resulting from the analysis depicted a quantifiable range as per the objectives set for this study required. The resultant data in turn has added more literature to the topic for further research and innovations on the matter.

3.2 Research Method

Multinomial logit regression was utilized to analyze the data. Multinomial logit regression is a powerful tool for analyzing categorical outcomes with more than two categories. It helps to understand the relationships between multiple independent variables and the probability of different outcomes. This method is suitable for dependent variables with multiple unordered categories, such as the three repayment performance statuses. The analysis aimed to determine the influence of the independent variables on the probability of each repayment status.

3.3   Research Design and Variable Definition

The study aims to determine the significance of the independent variables on the dependent variable. The variables which significantly affect repayment performance are determined as follows:

Y = f (saving amount, loan amount, type of loan borrowers, exposure to natural disaster, repayment frequency)

where:

1. Y: Repayment performance: Repayment performance is the dependent variable. The data is based on the credit status of microfinance members. For analytical purposes, the repayment statuses were classified into three categories:
   - $y_t = 1$ if the repayment is paid on time (borrowers who repaid as scheduled). The category, "Paid on time," is the base outcome in this study.
   - $y_t = 2$ if delinquency exists (borrowers who missed up to two installments out of four in a month or repaid less than the appropriate amount)
   - $y_t = 3$ if default exists (borrowers who missed up to three installments out of four in a month)

2. Saving Amount: The microfinance member's savings balance is an independent variable in the study. Microfinance members do not have any specific amount restriction for keeping savings. Therefore, the saving amount varies from zero to lakhs. Saving amounts in the study are in Bangladeshi Taka.

3. Loan Amount: The initial loan amount received by the microfinance member is an independent variable in the study. In the dataset used in this study, microfinance members have taken loans ranging from thousands to lakhs. Loan amounts in the study are in Bangladeshi Taka.

4. Repayment Frequency: Repayment frequency of loan installments is an independent variable in the study. Microfinance members can pay installments weekly or monthly. In this study, the repayment frequency was divided into two ordinal variables defined as follows:
   - Repayment frequency is 1 if the repayment of installments is on a weekly basis.
   - Repayment frequency is 2 if the repayment of installments is on a monthly basis.

5. Type of Loan Borrowers: Loan classification based on the initial loan amount is an independent variable in the study. In this study, the type of loan borrowers was divided into three ordinal variables defined as follows:

- Type of loan borrowers is 1 if the members take loans less than 50,000 Taka and are categorized as "Ultra Poor."

- Type of loan borrowers is 2 if the members take loans less than 100,000 Taka and are categorized as "Moderate Poor."

- Type of loan borrowers is 3 if the members take loans more than 100,000 Taka and are categorized as "Enterprise."

6. Exposure to Natural Disaster: Vulnerability of the microfinance member to natural disasters is an independent variable in the study. In this study, data of microfinance members was taken from 10 branches in coastal regions. According to their exposure to natural disasters, the branches were categorized into three levels:

- Low exposure = 1

- Moderate exposure = 2

- High exposure to natural disasters = 3

3.4 Data Collection

This study investigates the factors influencing the repayment rates of microfinance programs offered by COAST Foundation within the coastal regions of Cox's Bazar and Outreach in Bangladesh. Data for this research was collected from ten branches located in these regions: Teknaf, Kutubdia Sadar, Dhurong, Pekua, Hnila, Moheskhali Sadar, Hoanok, Kalamarchara, and Badarkhali. By focusing on these coastal areas, this study aims to understand the impact of microfinance activities on vulnerable populations residing in disaster-prone regions.

This study employs a mixed research approach. The factors affecting the repayment rate of microfinance programs include both qualitative and quantitative data. Qualitative variables, such as exposure to natural disasters, are explored through in-depth interviews, observations, and document analysis. The study also involves quantitative variables, such as saving amount, loan amount, repayment frequency, and type of loan, which are collected from the dataset of COAST Foundation.

3.5 Data Analysis

These five independent variables were chosen because they are considered to be key factors that can significantly influence the repayment performance of microfinance borrowers. The

rationale for selecting these five independent variables to determine their significance on repayment performance in this microfinance study is outlined below.

1. Saving Amount

- Financial Buffer: Savings act as a buffer against unforeseen circumstances, including loan repayments. Higher savings can provide borrowers with greater financial flexibility to meet their loan obligations, even during periods of income shocks or unexpected expenses.

- Financial Discipline: Savings can also indicate a borrower's financial discipline and responsible financial behavior, which are often associated with improved repayment performance.

2. Loan Amount

- Repayment Burden: Larger loan amounts generally translate to higher repayment installments, potentially increasing the financial burden on borrowers. This can increase the risk of delinquency or default.

- Borrower Capacity: Loan amounts should be commensurate with the borrower's income and repayment capacity. Overborrowing can strain a borrower's finances and increase the likelihood of repayment difficulties.

3. Type of Loan Borrowers

Categorizing borrowers based on loan amount enables a more nuanced risk assessment.

- Ultra-Poor borrowers: May face greater financial vulnerability and may be more susceptible to repayment challenges due to limited income and higher exposure to shocks.

- Moderate Poor borrowers: May have slightly better financial capacity but still face significant financial constraints.

- Enterprise borrowers: May have higher repayment capacity due to stronger business activities and higher incomes.

4. Repayment Frequency

- Cash Flow Management: Cash Flow Management: Weekly repayments may be more manageable for borrowers with irregular or unpredictable income streams, as it allows for smaller, more frequent payments. Also, at the same time, paying weekly installment at the period of facing financial crisis is difficult for microfinance member, then monthly installment may seem more viable.

5. Exposure to Natural Disaster

- Income Shocks: Natural disasters can significantly impact income, livelihoods, and assets, directly affecting borrowers' ability to repay loans.

- Vulnerability: This variable helps to understand the differential impact of natural disasters on different borrower groups and regions.

Chapter 4: Descriptive Analysis

4.1. Interpretation of Factors Descriptive Statistics

Savings Amount			
Percentiles		Smallest	Obs	100
1%	1	0	Sum of Wgt.	100
5%	9.5	2	Mean	15449.67
10%	24	7	Std. Dev.	20177.31
25%	4900	9	Variance	4.07E+08
50%	11347		Skewness	3.746016
		Largest	Kurtosis	20.78771
75%	18341	65264	
90%	30064.5	66589	
95%	43789.5	109986	
99%	125033	140080	

Saving Amount: The distribution of savings amounts exhibited a significant degree of skewness, with a long right tail (positive skewness of 3.746). This indicates that a majority of borrowers possess relatively low savings, while a smaller proportion have considerably higher savings. The high kurtosis (20.78771) further emphasizes the presence of extreme values or outliers within the data. The mean savings amount was 15,449.67, while the median was 11,347. The notable difference between the mean and median provides further evidence of the positive skewness of the distribution. Furthermore, the standard deviation of 20,177.31 signifies substantial variability in savings amounts among borrowers, highlighting the heterogeneity of the borrower population in terms of their financial resources.

Loan Amount			
Percentiles		Smallest	Obs	100
1%	20000	20000	Sum of Wgt.	100
5%	40000	20000	Mean	72600
10%	40000	30000	Std. Dev.	46658.44
25%	50000	30000	Variance	2.18E+09
50%	60000		Skewness	4.081827
		Largest	Kurtosis	26.39055
75%	80000	150000	
90%	120000	200000	
95%	150000	200000	
99%	300000	400000	

Loan Amount: The distribution of loan amounts exhibits a highly skewed distribution with a long right tail (positive skewness of 4.081827), indicating that a majority of loans are relatively small, while a smaller proportion of borrowers receive significantly larger loans. This is further

supported by the high kurtosis (26.39055), suggesting the presence of extreme values or outliers within the data. The mean loan amount was 72,600, while the median was 60,000. The difference between the mean and median, along with the high skewness and kurtosis, confirms the presence of a skewed distribution with a concentration of smaller loans and a few very large loans. Furthermore, the standard deviation of 46,658.44 highlights considerable variability in loan amounts, emphasizing the heterogeneity of loan sizes within the sample.

Repayment Frequency				
Percentiles		Smallest	Obs	100
1%	1	1	Sum of Wgt.	100
5%	1	1	Mean	1.33
10%	1	1	Std. Dev.	0.472582
25%	1	1	Variance	0.223333
50%	1		Skewness	0.723077
		Largest	Kurtosis	1.52284
75%	2	2		
90%	2	2		
95%	2	2		
99%	2	2		

Repayment Frequency: The analysis of repayment frequency reveals a skewed distribution with a majority of borrowers adhering to more frequent repayment schedules. The mean repayment frequency is 1.33, suggesting that a significant proportion of borrowers have weekly repayment schedules (coded as 1), while a smaller proportion have less frequent schedules (potentially monthly, coded as 2). This is further supported by the median, which is also 1, indicating that 50% of borrowers have weekly repayment schedules. The standard deviation of 0.4725816 suggests moderate variability in repayment frequencies across the borrower population. The positive skewness (0.723077) and kurtosis (1.52284) indicate a slight deviation from a perfectly symmetrical distribution, with a longer tail towards less frequent repayment schedules.

Level of Borrowers				
Percentiles		Smallest	Obs	100
1%	1	1	Sum of Wgt.	100
5%	1	1	Mean	1.69
10%	1	1	Std. Dev.	0.662029
25%	1	1	Variance	0.438283
50%	2		Skewness	0.431461
		Largest	Kurtosis	2.249398
75%	2	3		
90%	3	3		
95%	3	3		
99%	3	3		

Level of Borrowers: The analysis of borrower levels reveals a skewed distribution, with a majority of borrowers categorized as "Ultra-Poor" (likely coded as 1). The mean borrower level is 1.69, and the median is 1, further supporting the concentration of borrowers in the lower categories. This suggests that the microfinance institution primarily serves lower-income segments of the population. While there is moderate variability in borrower levels, as indicated by the standard deviation of 0.6620293, the distribution exhibits a slight positive skew, suggesting a presence of borrowers in higher categories ("Moderate Poor" and "Enterprise").

Exposure to Natural Disaster				
Percentiles		Smallest	Obs	100
1%	1	1	Sum of Wgt.	100
5%	1	1	Mean	2.2
10%	1.5	1	Std. Dev.	0.603023
25%	2	1	Variance	0.363636
			Skewness	-0.11111
50%	2		Kurtosis	2.555556
		Largest		
75%	3	3		
90%	3	3		
95%	3	3		
99%	3	3		

Exposure to Natural Disasters: The analysis of exposure to natural disasters reveals a moderately skewed distribution. The mean exposure level is 2.2, indicating that, on average, borrowers reside in areas with moderate exposure. This is further supported by the median, which is also 2. The standard deviation of 0.6030227 suggests moderate variability in exposure levels across the borrower population. The distribution exhibits a slight negative skew, indicating a longer tail towards higher exposure levels. This suggests that a portion of the borrower population resides in areas with significantly higher exposure to natural disasters, potentially increasing their vulnerability to loan repayment disruptions.

4.2. Multinomial Logistic Regression's Result

Variables	Delinquent				Default			
	Coefficient	Standard Error		Z	Coefficient	Standard Error		Z
Savings Amount	-0.0000692	0.000051		-1.36	-0.0185793	0.0152509		-1.22
Loan Amount	-0.0000594	0.0000362		-1.64	0.0000242	0.0000579		0.42
Repayment Frequency	-0.720497	0.8973391		-0.8	1.731522	1.765264		0.98
Level of Borrowers	1.959674	1.158546	*	1.69	-4.939287	4.603877		-1.07
Exposure to Natural Disaster	-1.056824	0.6193874	*	-1.71	4.02294	4.279021		0.94
No coefficients are significant at the 1% level. No coefficients are significant at the 5% level. * significant @ 10% level. Likelihood ratio test: Chi-square(10) = 92.77 [0.0000]								

Figure 1: Multinomial logistic regression's result

4.3. Model Fit and Predictive Power

The logistic regression model demonstrated a significant relationship between the independent variables and the repayment status (LR chi2(10) = 92.77, p < 0.0001). The Pseudo R-squared of 0.5684, while an approximate measure of model fit in logistic regression, indicates that the model explains a substantial proportion of the variance in repayment status. This suggests that the included variables provide meaningful predictive power in determining the likelihood of loan repayment. However, it is important to note that Pseudo R-squared values can vary across different estimation methods and should be interpreted with caution. Further evaluation of the model's predictive accuracy through techniques such as cross-validation is recommended.

4.4. Interpretation of Coefficients (Delinquency)

The analysis revealed several factors potentially influencing loan repayment performance. While higher savings amounts and larger loan sizes exhibited a slight, non-significant trend towards lower delinquency rates, the regression analysis revealed these effects to be minimal. For instance, the coefficient for savings amount was -0.0000692 (p=0.175), indicating a negligible impact. Similarly, the coefficient for loan amount was -0.0000594 (p=0.101), suggesting a minimal association with delinquency. Repayment frequency, whether weekly or monthly, did not significantly impact delinquency rates (coefficient: -0.720497, p=0.422). Notably, "Moderate Poor" and "Enterprise" borrowers exhibited a marginally lower likelihood of delinquency compared to "Ultra-Poor" borrowers (coefficient: 1.959674, p=0.091). Conversely, higher exposure to natural disasters was associated with a marginally significant

increase in delinquency risk (coefficient: -1.056824, p=0.088), suggesting that borrowers residing in disaster-prone areas may face greater challenges in repaying their loans.

4.5. Interpretation of Coefficients (Default)

While higher savings balances were associated with a decreased likelihood of default, this relationship was not statistically significant, aligning with the regression analysis. The coefficient for savings amount (-0.0185793, p=0.223) suggested a potential decrease in the odds of default but lacked statistical significance. Similarly, loan amount had a negligible or no effect on default probability, as indicated by the very small and statistically insignificant coefficient (0.0000242, p=0.676). Borrowers with weekly repayment schedules exhibited a slight increase in the likelihood of default compared to those with monthly repayments, although this effect was not statistically significant (coefficient: 1.731522, p=0.327). Moderate Poor and Enterprise borrowers demonstrated a trend towards lower default rates compared to Ultra-Poor borrowers, although this relationship was not statistically significant (coefficient: -4.939287, p=0.283). Finally, borrowers residing in areas with higher exposure to natural disasters exhibited a higher likelihood of default, although this effect was not statistically significant (coefficient: 4.02294, p=0.347).

Chapter 5: Findings

5.1. Multinomial Logistic Regression Results Implications

5.1.1. Repayment Performance of Good Borrowers

The analysis identified several significant factors influencing the repayment performance of borrowers classified as "good" (i.e., those who consistently paid on time).

- Exposure to Natural Disasters: A negative coefficient for "Exposure to Natural Disasters" suggests that borrowers residing in areas with higher exposure to natural disasters are less likely to be categorized as "good borrowers." This finding aligns with expectations, as natural disasters can significantly impact income and, consequently, the ability to repay loans.

- Level of Borrowers: A positive coefficient for "Level of Borrowers" indicates that borrowers in higher loan amount categories ("Moderate Poor" and "Enterprise") are more likely to be classified as "good borrowers." This observation is generally consistent with the expectation that higher loan amounts may be associated with stronger businesses and better repayment capacity.

Conversely, several factors exhibited marginal significance in influencing the likelihood of being a "good borrower."

- Repayment Frequency: The negative coefficient for "Repayment Frequency" suggests that borrowers with weekly repayment schedules might have slightly lower odds of being classified as "good borrowers" compared to those with monthly repayments. This observation may be attributed to the potential challenges of adhering to weekly repayment schedules during periods of financial hardship. However, the effect of repayment frequency on the likelihood of being a "good borrower" was not statistically significant.

- Savings Amount: An unexpected finding emerged regarding the relationship between "Savings Amount" and the likelihood of being a "good borrower." The negative coefficient suggests that higher savings balances might be marginally associated with lower odds of being classified as "good borrowers." This counterintuitive result warrants further investigation to understand the underlying factors contributing to this relationship.

5.1.2. Repayment Performance of Delinquent Borrowers

Several significant factors were identified in predicting borrower delinquency.

- Exposure to Natural Disasters: A positive coefficient for "Exposure to Natural Disasters" indicates that borrowers in areas with higher exposure to natural disasters are more likely to be classified as "delinquent borrowers." This finding confirms the expected negative impact of disasters on repayment capacity.

- Level of Borrowers: A negative coefficient for "Level of Borrowers" suggests that borrowers in higher loan amount categories are less likely to be classified as "delinquent borrowers." This aligns with the expectation that larger loan amounts may be associated with stronger businesses and better repayment capacity.

5.1.3. Repayment Performance of Default Borrowers

The analysis revealed factors with marginal significance in predicting borrower default.

- Repayment Frequency: A positive coefficient for "Repayment Frequency" suggests that borrowers with weekly repayment schedules might be marginally associated with higher odds of default compared to those with monthly repayments. This observation supports the earlier observation regarding the potential challenges of weekly repayments during periods of financial hardship.

5.2. Key Observations of Results

Exposure to natural disasters significantly impacted repayment performance across all borrower categories, underscoring the crucial need for microfinance institutions to carefully assess disaster risk in their lending decisions. Notably, borrowers in higher loan amount categories ("Moderate Poor" and "Enterprise") demonstrated distinct repayment behavior, exhibiting both higher probabilities of being "good borrowers" and lower probabilities of delinquency. This suggests that these borrowers possess stronger businesses and more robust financial management capabilities. The findings regarding the optimal repayment frequency were less conclusive. While some marginal effects were observed, further research is necessary to determine the most suitable repayment schedules for different borrower segments.

Chapter 6: Conclusion

This study aimed to investigate the key determinants of loan repayment performance among microfinance borrowers in coastal areas of Bangladesh, a region characterized by significant environmental vulnerabilities and socioeconomic challenges. Utilizing multinomial logistic regression analysis, the study analyzed the impact of various factors, including savings amount, loan amount, borrower level, repayment frequency, and exposure to natural disasters, on borrower repayment behavior.

The findings revealed several crucial insights. Firstly, exposure to natural disasters emerged as a significant predictor of repayment performance across all borrower categories. Borrowers residing in areas with higher exposure to natural disasters were significantly less likely to be classified as "good borrowers" and significantly more likely to be delinquent or default on their loans.

Secondly, the "Level of Borrowers", categorized as Ultra-Poor, Moderate Poor, and Enterprise, demonstrated a significant influence on repayment outcomes. Borrowers in higher loan amount categories ("Moderate Poor" and "Enterprise") exhibited distinct patterns, displaying both higher probabilities of being "good borrowers" and lower probabilities of being delinquent, suggesting that these borrowers possess stronger businesses and better financial management skills.

The findings regarding repayment frequency were less conclusive. While some marginal effects were observed, further investigation is needed to determine the optimal repayment schedule for different borrower segments. The study also found that savings amount and loan amount had limited or no significant impact on repayment performance.

It is important to acknowledge that the regression model may have benefited from the inclusion of additional variables. Several key factors can influence microfinance repayment rates. Loan characteristics such as interest rates, loan purpose, and loan term also significantly impact repayment. MFI characteristics, including size and experience, loan officer quality, outreach strategies, and governance, contribute to overall performance.

In conclusion, this study provides valuable insights into the factors influencing loan repayment performance in coastal areas of Bangladesh. The findings underscore the critical importance of considering disaster risk, promoting financial inclusion, and enhancing the financial capacity of borrowers in designing and implementing effective microfinance programs in these vulnerable regions.

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Appendix

Multinomial logistic regression				Number of obs	=	100
				LR chi2(10)	=	92.77
				Prob > chi2	=	0.0000
Log likelihood = **-35.226087**				Pseudo R2	=	0.5684
repaymentstatus	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]	
Paid_on_time	(base outcome)					
Delinquency						
savingsamount	**-.0000692**	**.000051**	**-1.36**	**0.175**	**-0.0001691**	**0.0000307**
loanamount	**-.0000594**	**.0000362**	**-1.64**	**0.101**	**-0.0001304**	**0.0000115**
repaymentfrequency	**-.720497**	**.8973391**	**-0.8**	**0.422**	**-2.479249**	**1.038255**
levelofborrowers	**1.959674**	**1.158546**	**1.69**	**0.091**	**-0.311035**	**4.230383**
exposuretonaturaldisaster	**-1.056824**	**.6193874**	**-1.71**	**0.088**	**-2.270801**	**0.1571529**
_cons	**2.802267**	**2.261536**	**1.24**	**0.215**	**-1.630262**	**7.234797**
Default						
savingsamount	**-.0185793**	**.0152509**	**-1.22**	**0.223**	**-0.0484705**	**0.0113119**
loanamount	**.0000242**	**.0000579**	**0.42**	**0.676**	**-0.0000893**	**0.0001377**
repaymentfrequency	**1.731522**	**1.765264**	**0.98**	**0.327**	**-1.728331**	**5.191376**
levelofborrowers	**-4.939287**	**4.603877**	**-1.07**	**0.283**	**-13.96272**	**4.084145**
exposuretonaturaldisaster	**4.02294**	**4.279021**	**0.94**	**0.347**	**-4.363787**	**12.40967**
_cons	**-.8225022**	**6.012333**	**-0.14**	**0.891**	**-12.60646**	**10.96145**

Figure 2: Multinomial logistic regression results of Stata.

Microfinance Member Data of Different Region

Serial	Borrower's Name	Savings Amount	Loan Amount	Repayment Frequency	Level of Borrowers	Repayment Status	Exposure to Natural Disaster	Location
1	Shamsun Nahar	37004	80000	Weekly	2	Deliquency	Low	Teknaf
2	Ayasa Akter	13269	50000	Weekly	1	Paid on time	Low	
3	Anoara Begum	9	50000	Monthly	1	Default	Low	
4	Samjeda Begum	17823	80000	Weekly	2	Paid on time	Low	
5	Moriom Khatun	7580	80000	Monthly	2	Deliquency	Low	
6	Rujina Akter	0	80000	Weekly	2	Deliquency	Low	
7	Nur Jahan	14905	50000	Weekly	1	Paid on time	Low	
8	Minu Ara Akter	21545	70000	Weekly	2	Paid on time	Low	
9	TASLIMA JANNAT	15832	60000	Weekly	2	Paid on time	Low	
10	Goul Meahar	13845	50000	Weekly	1	Paid on time	Low	
11	Roksana Begum	7,310	40000	Weekly	1	Paid on time	High	Kutubdia Sadar
12	Rupban Begum	50,575	40000	Weekly	1	Paid on time	High	
13	Rowshan Akter	9,368	60000	Weekly	2	Deliquency	High	
14	Hadisa Begum	65,264	50000	Monthly	1	Paid on time	High	
15	Khatiza Begum	17,388	50000	Weekly	1	Paid on time	High	
16	Anisa Akter	36,181	80,000	Weekly	2	Paid on time	High	
17	Sarmin Akter	8,982	50,000	Weekly	1	Paid on time	High	
18	Nurunnahar	25	50,000	Weekly	1	Default	High	
19	Tasmin Akter	109,986	40,000	Monthly	1	Paid on time	High	
20	Nilu Akter	18,030	80000	Monthly	2	Paid on time	High	
21	Rogina Akter	20	200000	Monthly	3	Default	High	Dhurong
22	Rokeya Begum	17949	80000	Weekly	2	Paid on time	High	
23	Salma Akter	12184	130000	Weekly	3	Paid on time	High	
24	Mosharafa Begum	102	100000	Monthly	2	Default	High	
25	Fardus	31346	150000	Weekly	3	Paid on time	High	
26	KULSUMA BEGUM	17	150000	Monthly	3	Default	High	
27	MUNNI AKTER	27993	150000	Weekly	3	Paid on time	High	
28	Shefa Akter	35	40000	Monthly	1	Default	High	
29	Karima Begum	15777	80000	Monthly	2	Paid on time	High	
30	Aganara Begum	16,164	70000	Weekly	2	Paid on time	High	
31	Rehena Begum	104	40000	Monthly	1	Default	Moderate	Pekua
32	Kulsuma Begum	14435	60000	Monthly	2	Paid on time	Moderate	
33	Gul Bahar	10	80000	Monthly	2	Default	Moderate	
34	Ayesha Begum	12047	60000	Weekly	2	Paid on time	Moderate	
35	Monira Begum moina	30	40000	Monthly	1	Default	Moderate	
36	Gul Meher	50	80000	Monthly	2	Default	Moderate	
37	Rina Akter	9425	60000	Monthly	2	Deliquency	Moderate	
38	HASINA BEGUM	10	60000	Weekly	2	Paid on time	Moderate	
39	DILOWARA BEGUM	7775	50000	Weekly	1	Paid on time	Moderate	
40	LAILA BEGUM	7420	80000	Monthly	2	Paid on time	Moderate	
41	Talima Khatun	29,524	80,000	Weekly	2	Paid on time	Moderate	Hnila
42	Manuwara Begum	66,589	80,000	Weekly	2	Paid on time	Moderate	
43	Shamsun Nahar	18,860	60,000	Weekly	2	Deliquency	Moderate	
44	ROMANA PERVIN RINA	15,558	80,000	Monthly	2	Paid on time	Moderate	
45	Mahmuda	31,612	60,000	Weekly	2	Paid on time	Moderate	
46	JANNATUL FERDUS	2	50,000	Monthly	1	Default	Moderate	
47	JANNAT ARA BEGUM	40	60,000	Monthly	2	Default	Moderate	
48	Sakina Khatun	11,301	40,000	Weekly	1	Paid on time	Moderate	
49	Rahima Khatun	10,814	40,000	Weekly	1	Deliquency	Moderate	
50	Nur Ayeasha	9	80,000	Monthly	2	Paid on time	Moderate	

Figure 3: Microfinance member data of 10 branches of coastal region

Serial	Borrower's Name	Savings Amount	Loan Amount	Repayment Frequency	Level of Borrowers	Repayment Status	Exposure to Natural Disaster	Location
51	RESMA KHATUN	401	50,000	Weekly	1	Deliquency	Moderate	Moheshkhali Sadar
52	DILRUBA KHANAM RUNA	18,652	70,000	Weekly	2	Paid on time	Moderate	
53	RUBY AKTER	10,423	50,000	Monthly	1	Paid on time	Moderate	
54	SALAHA AKTHER	4,285	70,000	Weekly	2	Paid on time	Moderate	
55	NAHIDA AKTER	15,060	60,000	Weekly	2	Paid on time	Moderate	
56	LASEN	7,725	50,000	Weekly	1	Paid on time	Moderate	
57	KHURSHIDA BEGUM	13,640	80,000	Weekly	2	Paid on time	Moderate	
58	NASIMA AKHTER	27,090	200,000	Monthly	3	Paid on time	Moderate	
59	ROSANARA BEGUM	19,312	120,000	Weekly	3	Paid on time	Moderate	
60	HAMIDA BEGUM	17,928	150,000	Monthly	3	Paid on time	Moderate	
61	ARFA BEGUM	26,782	80,000	Weekly	2	Paid on time	Moderate	Hoanok
62	RINU ARA	8,436	50,000	Weekly	1	Paid on time	Moderate	
63	Dilder Begum	30	60,000	Monthly	2	Default	Moderate	
64	MOSENA AKTER	8,314	60,000	Monthly	2	Paid on time	Moderate	
65	Senwara Begum	48	50,000	Weekly	1	Default	Moderate	
66	Samuda Khatun	23	80,000	Weekly	2	Default	Moderate	
67	ARFA KHATUN	12,374	70,000	Weekly	2	Deliquency	Moderate	
68	AEYSA KHATUN	7	50,000	Weekly	1	Default	Moderate	
69	HOMAYRA MINO	18,685	50,000	Weekly	1	Paid on time	Moderate	
70	SELINA AKTER	10,750	50,000	Weekly	1	Deliquency	Moderate	
71	ROKEYA BEGUM	7,521	50,000	Weekly	1	Paid on time	Moderate	
72	FARIDA YEASMIN	19,483	80,000	Weekly	2	Paid on time	Moderate	
73	RABEYA KHATUN	12,161	50,000	Weekly	1	Paid on time	Moderate	
74	BULBUL AKTER	9,716	50,000	Weekly	1	Paid on time	Moderate	
75	JANNAT BEGUM	12,063	50,000	Weekly	1	Deliquency	Moderate	
76	ZANNATUL FARDUS	9,525	50,000	Weekly	1	Paid on time	Moderate	
77	JANNATUL MOKARRAMA	15,480	80,000	Weekly	2	Paid on time	Moderate	
78	RIYAJJUNNAHAR	8,450	50,000	Weekly	1	Paid on time	Moderate	
79	MURSHIDA AKTER	8,500	50,000	Weekly	1	Paid on time	Moderate	
80	KHADIJA BEGUM	30,605	150,000	Weekly	3	Paid on time	Moderate	
81	KOWSAR JAHAN	10,382	70,000	Weekly	2	Deliquency	Moderate	Kalarmarchara
82	Riazor Nahar	9,158	40,000	Monthly	1	Paid on time	Moderate	
83	SHAMSON NAHAR	21,799	80,000	Weekly	2	Paid on time	Moderate	
84	SAFAITUN NAHAR	11,393	70,000	Weekly	2	Paid on time	Moderate	
85	SARMINA AKTER LUCKY	15,609	70,000	Weekly	2	Paid on time	Moderate	
86	SANUARA	19,804	80,000	Weekly	2	Paid on time	Moderate	
87	Amena Begum	15,015	70,000	Weekly	2	Paid on time	Moderate	
88	KOHINUR YASMIN	25,020	50,000	Monthly	1	Paid on time	Moderate	
89	SOLAMA KHATUN	20,981	80,000	Monthly	2	Paid on time	Moderate	
90	Halima Akter	12,100	80,000	Weekly	2	Paid on time	Moderate	
91	Jesmin Akter	78	70,000	Monthly	2	Default	High	Badarkhali
92	YEASMIN AKTER	10,424	50,000	Weekly	1	Paid on time	High	
93	ASMAUL HOSNA	9,100	50,000	Weekly	1	Paid on time	High	
94	LAILA BEGUM	5,100	40,000	Monthly	1	Paid on time	High	
95	Hafsa Khaman	5,341	30,000	Weekly	1	Paid on time	High	
96	ZITUN ARA KANAM	3,176	20,000	Weekly	1	Deliquency	High	
97	SABEKUN NAHAR	3,015	20,000	Weekly	1	Paid on time	High	
98	MST. BORHANA BEGUM	4,700	30,000	Monthly	1	Paid on time	High	
99	Hasnahena	140,080	400,000	Weekly	3	Paid on time	High	
100	Sahena Akter	27,100	120,000	Monthly	3	Paid on time	High	

Figure 4: Microfinance member data of 10 branches of coastal region