Factors Influencing the Financial Sustainability Of
Selected Microfinance Institutions in Namibia

Jonathan Adongo
Christoph Stork

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Abstract

In a stable political environment and enabling macro economy, microfinance institutions are important in providing savings, credit, funds transfer and other financial intermediation facilities to low-income households, micro-enterprises and marginal small-scale enterprises. Effective, long-term provision of these facilities occurs through microfinance institutions that adhere to the key principles of microfinance endorsed by the Consultative Group to Assist the Poorest (CGAP).

The fourth key microfinance principle states that “[m]icrofinance can pay for itself, and must do so if it is to reach ... large numbers of poor people”. This report focused on this fourth key microfinance principle by empirically estimating the financial sustainability of selected microfinance institutions in Namibia’s formal sector.

In recognition that financial sustainability is a necessary condition for a microfinance institution to scale up to a level that allows it to provide microfinance to a large client base, independent of external subsidies over the long-term; this report applied Ordinary Least Squares to an Analysis of Covariance model consisting of cross-sectional data that captured various features of selected microfinance institutions in Namibia to identify the factors that influenced their financial sustainability.

This report found that, from a development policy perspective, there has been some encouraging activity in the microfinance industry over the past few years. However, according to the definition of financial sustainability adopted in this report, it was found that all the selected microfinance institutions in Namibia are not yet financially sustainable.

This report’s finding of financial unsustainability, across the board, for microfinance institutions in Namibia is partly attributed to the fact that interest rates that microfinance institutions require to break-even exceed the ceiling imposed by the Usury Act of 1968. Most importantly it highlights the conflict between efforts to protect borrowers from the adverse social impact of overwhelmingly high interest rates and efforts to increase access to financial services.

Although this finding empirically justifies the claim that the Usury Act of 1968 is the regulation that has the most impact on the financial sustainability of microfinance institutions in Namibia, the raising of the ceiling is not a clear policy option. Due to its important role in protecting the consumer from overwhelmingly high interest rates alternative ways to reduce the degrees of financial unsustainability should be explored.

Based on the formula used to calculate financial sustainability in this report the alternative options available include finding ways to reduce costs, increasing the number or size of loans disbursed, without compromising the loan portfolio, or reducing default rates.

Out of all microfinance institutions included in this report, the degree of financial unsustainability was lowest for term micro-lenders and was highest for multi-purpose
co-operatives involved in the provision of microfinance. The high degree of financial unsustainability for the multi-purpose co-operatives may be partly attributed to the fact that they are currently the only category of microfinance institutions included in this report, for which data was available, that were providing both financial and non-financial services and did not separate the costs of providing non-financial from the costs of providing financial services in their reporting to the Registrar of Co-operatives.

The high degree of financial unsustainability for multipurpose co-operatives providing microfinance is confirmed by evidence based on the model adopted in this report, which indicates that multipurpose co-operatives providing microfinance are negatively related to financial sustainability. This finding implies that if the cost of providing non-financial services is managed and separated from that of providing financial services, financial sustainability should improve for this category.

The model adopted in this report also provides evidence that donor involvement in providing start-up funds for the loan portfolio is positively associated with financial sustainability. However, this report strongly qualifies this statement by reiterating that the definition of financial sustainability is the ability to cover cost independent of external subsidies from donors or government. The formula adopted to calculate financial sustainability in this report does not focus on the sources of funds used to cover costs and does not differentiate between donor and government funds and self-generated funds.

In the attempt to test the relationship between the group lending methodology in microfinance service provision and financial sustainability, the model adopted in this report highlights the identity of microfinance institutions as opposed to the theoretically posited relationship that group lending should positively influence financial sustainability for microfinance institutions because the peer pressure that group members exert on each other should lead to lower default rates on the number of loans disbursed. This suggests that to reduce the default rate, group lending strategies can be complemented by the adoption of credit and risk management tools.

Furthermore, the model adopted in this report does not find evidence that a lower per capita income in the microfinance target group will hinder the financial sustainability of the selected microfinance institutions in this report.

Finally, but most importantly, this report identified that improving the reliability of reported information for the selected microfinance institution is a key issue that needs to be addressed by both regulators and practitioners. Apart from the structure, ownership and control; another key criterion of good governance is public, timely and full reporting of an institution’s activities and results (Graham Bannock & Partners, 1997). The collection of more complete information for each microfinance category included in this report will allow their governing bodies to more accurately and effectively apply the method used in this report to monitor progress towards attaining financial sustainability for microfinance institutions operating in Namibia.
Acknowledgements

The authors would like to thank FinMark Trust for providing the funding for this research report. The authors would also like to thank the Division of Co-operative Development in the Ministry of Agriculture, Water and Forestry and the Namibia Financial Institutions Supervisory Authority for providing the information that made this research effort possible and for attending the focus group discussion on the draft report that provided valuable insights that greatly improved this report.

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For any comments or questions regarding this paper please contact

Jonathan Adongo (jonathana@nepru.org.na).

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<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACCOSCA</td>
<td>African Confederation of Co-operative Savings and Credit Associations</td>
</tr>
<tr>
<td>ANCOVA</td>
<td>Analysis of Covariance</td>
</tr>
<tr>
<td>BoN</td>
<td>Bank of Namibia</td>
</tr>
<tr>
<td>CGAP</td>
<td>Consultative Group to Assist the Poorest</td>
</tr>
<tr>
<td>CYCI</td>
<td>Commonwealth Youth Credit Initiative</td>
</tr>
<tr>
<td>DCD</td>
<td>Division of Co-operative Development</td>
</tr>
<tr>
<td>FIDES</td>
<td>International Finance for Social and Economic Development</td>
</tr>
<tr>
<td>FOS</td>
<td>Fund for Development Cooperation</td>
</tr>
<tr>
<td>GTZ</td>
<td>German Agency for Technical Cooperation</td>
</tr>
<tr>
<td>KfW</td>
<td>Kreditanstalt für Wiederaufbau</td>
</tr>
<tr>
<td>LIMDEP</td>
<td>Limited Dependent Variables</td>
</tr>
<tr>
<td>MAWF</td>
<td>Ministry of Agriculture, Water and Forestry</td>
</tr>
<tr>
<td>MPCM</td>
<td>Multi-purpose Co-operative providing Microfinance</td>
</tr>
<tr>
<td>MTISC</td>
<td>Ministry of Trade and Industry Steering Committee</td>
</tr>
<tr>
<td>MTI</td>
<td>Ministry of Trade and Industry</td>
</tr>
<tr>
<td>NACP</td>
<td>National Agricultural Credit Program</td>
</tr>
<tr>
<td>NAD</td>
<td>Namibian Dollars</td>
</tr>
<tr>
<td>NAMFISA</td>
<td>Namibia Financial Institutions Supervisory Authority</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<tr>
<td>NHAG</td>
<td>Namibia Housing Action Group</td>
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<tr>
<td>OLS</td>
<td>Ordinary Least Squares</td>
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<tr>
<td>PIN</td>
<td>Personal Identification Number</td>
</tr>
<tr>
<td>RISE</td>
<td>Rural Peoples’ Institute for Social Empowerment in Namibia</td>
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<tr>
<td>SACCO</td>
<td>Savings and Credit Co-operative</td>
</tr>
<tr>
<td>SBCGT</td>
<td>Small Business Credit Guarantee Trust</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>SCA</td>
<td>Savings and Credit Association</td>
</tr>
<tr>
<td>SDFN</td>
<td>Shack Dweller’s Federation of Namibia</td>
</tr>
<tr>
<td>SEVA</td>
<td>a Sanskrit word meaning service</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium-Scale Enterprises</td>
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<tr>
<td>WAD</td>
<td>Women’s Action for Development</td>
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<tr>
<td>WOCCU</td>
<td>World Council of Credit Unions</td>
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1. INTRODUCTION

In a stable political environment and enabling macro economy, evidence arising over several decades has supported the view that the provision of microfinance is an important component of any effort to improve the livelihoods of the poor in any society. In recent years in Namibia, there has been renewed interest in microfinance by both policymakers and practitioners. This interest is based on its valued contribution to efforts aimed at improving the livelihoods of the rural population in Namibia through policies and programs geared towards addressing inequalities arising from the country’s socio-political history.

Microfinance refers to all types of financial intermediation services (savings, credit funds transfer, insurance, pension remittances, etc.) provided to low-income households and enterprises in both urban and rural areas, including employees in the public and private sectors and the self-employed (Robinson, 2003). Effective, long-term provision of these services occurs through microfinance institutions that adhere to the key principles endorsed by the Consultative Group to Assist the Poorest (CGAP) and its 28 member donors, which were further endorsed by the Group of Eight leaders at a Summit on June 10, 2004. These principles are outlined in Box 1 below.

This report focused on the fourth key microfinance principle by empirically estimating the financial sustainability of selected microfinance institutions in Namibia’s formal sector. Financial sustainability is defined as the development of products and delivery systems that meet client needs, at prices that cover all costs of providing these financial services, [independent of external subsidies] (Rosengard, 2001).

The main objective of this report was to identify factors influencing the financial sustainability of microfinance institutions in Namibia. The focus on financial sustainability is attributed to its conformity to the perspective that only independent, financially sustainable microfinance institutions will be able to attain the wide outreach necessary to achieve the highest level of impact on their target population, based on a globally affordable model that does not depend on long-term support, either from donors or the government (Robinson, 2003).

It is hoped that the findings of this report will inform practitioners as they design institutional models and regulators in their efforts to boost the effectiveness of microfinance provision in Namibia. By focusing on achieving institutional, financial sustainability; regulators and practitioners of microfinance in Namibia will contribute

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1 This definition is constantly evolving; however the essence of its evolution is that microfinance is simply finance on a smaller scale.
towards domestic institution building for financial capacity widening and deepening in locally constituted organisations and funds (Graham Bannock & Partners, 1997).

**Box 1: Key Microfinance Principles**

1. Poor people need a variety of financial services, not just loans;
2. Microfinance is a powerful tool to fight poverty;
3. Microfinance means building financial systems that serve the poor;
4. Microfinance can pay for itself, and must do so if it is to reach very large numbers of poor people;
5. Microfinance is about building permanent local financial institutions;
6. Micro credit is not always the answer… and is not the best tool for everyone or every situation;
7. Interest rate ceilings hurt poor people by making it harder for them to get credit;
8. The role of government is to enable financial services, not to provide them directly;
9. Donor funds should complement private capital, not compete with it;
10. The key bottleneck is the shortage of strong institutions and managers;

Source: [www.cgap.org](http://www.cgap.org) Date accessed: October 25, 2005

To achieve our goal this report applied Ordinary Least Squares (OLS) to an Analysis of Covariance (ANCOVA) regression model consisting of a cross-sectional dataset that captured the features of selected microfinance institutions operating in Namibia’s formal sector, as opposed to the informal sector, using Limited Dependent Variables (LIMDEP) version 7.0, an econometric software.

The scope of the formal sector microfinance institutions covered in this study included those governed by the Division of Co-operative Development (DCD) in the Ministry of Agriculture, Water and Forestry (MAWF), the Namibia Financial Institutions Supervisory Authority (NAMFISA) and the Ministry of Trade and Industry Steering Committee (MTISC). These included:

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2 MTI is involved to the extent that microfinance is a key component of its SME program.
- Savings and credit co-operatives (SACCOs) and multi-purpose co-operatives providing microfinance (MPCM). These are supported by the Rural Peoples Institute for Social Empowerment in Namibia (RISE), which is backed by funding from the Fund for Development Cooperation (FOS), a Belgian donor agency;

- savings and credit associations (SCAs) supported by the MTISC, which consists of various donor and development project financing agencies, financial institutions and regulatory bodies;

- Micro-lenders, commercial bank branches involved in the provision of microfinance and non-governmental organisations (NGOs) registered with NAMFISA.

Although the authors fully recognise the importance of NGOs directly involved in the provision of microfinance, those that are not registered by either the DCD or NAMFISA are not included in this study because they are governed by their own donor agencies and fall outside the scope of direct government policy. In addition, this report did not include micro insurance schemes, because the nature of their assets and liabilities would need a different model from the one adopted in this report.

Following this introduction, which serves as Section one, the remainder of the report is organised as follows: Section two provides a background to provision of microfinance in a Namibian context. Section three goes on to describe the methodology used to achieve the main objective of this report. This is followed by Section four, which presents the results of an application of the methodology and an associated discussion. Finally, Section five presents the conclusions.

\[\text{In this report MPCM is defined as a co-operative providing both financial and non-financial services.}\]

\[\text{Although, the multi-purpose co-operative providing microfinance in Namibia are termed as SCAs; the acronym MPCM was adopted in this report to avoid confusion with the SCAs supported by FIDES.}\]

\[\text{Although these SCAs are currently not registered by any formal authority, reports from practitioners and comments from the focus group discussion on the draft version of this report, indicate their intent to apply for a banking license under the Bank of Namibia.}\]

\[\text{The experience of some of these organisations was captured in a study by Roth (2002).}\]
2. BACKGROUND

This report focuses on the provision of microfinance to low-income households, micro-enterprises and marginal, small-scale enterprises (as opposed to all enterprises) operating in the formal sector in both urban and rural areas. In conformity to Robinson (2003) it does not explore issues arising in the provision of microfinance to nomadic pastoralists, hunters and gatherers, because their participation in a cash economy may be limited.

2.1. Types of Selected Microfinance Institutions

The microfinance institutions selected in this report can be grouped into five categories (Robinson, 2003):

The first category consists of microfinance institutions that fail in both lending and savings. This category includes many subsidised microfinance institutions that are well supplied with cheap donor or government funds. In his review of the NGO experience in the direct provision of microfinance in Namibia, Roth (2002) highlighted the plight of some of these organisations. In addition, Likwama Women’s Group in Caprivi is another example of an institution that falls into this category (NASSP, 2005b).

The second category consists of microfinance institutions that have successful microcredit (savings) programs, but are not permitted to mobilise savings from (disburse loans to) the public. This is usually because they are not regulated and supervised; and if mobilisation of savings is allowed these would be placed at risk because no form of prudential supervision will apply to them (Mushendami, Kaakunga, Amuthenu-Iyambo, Ndalikukole & Steytler, 2004). It can also come about as they do not have the necessary skills to assess, disburse and monitor a loan portfolio. Microfinance institutions in this category include NGOs involved in the provision of microfinance, micro-lenders and state-owned postal savings banks.

One disadvantage of direct provision of microfinance by NGOs is that they will always have higher costs for the amounts they lend relative to other microfinance institutions. Even if their inability to mobilise savings is addressed through regulatory change, they have a wider focus in supporting the health, education and nutrition needs of the microfinance target group i.e. low-income households and micro-enterprises. As they become increasingly involved in microfinance the high costs of non-financial services will result in their lending more to larger clients with less risk, which goes against their stated objectives to reach the poorest of the poor.

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7 At a World Summit on Microcredit in 1997 attempts were made to distinguish microfinance from microcredit, which in addition to the provision of only credit includes the provision of ancillary devices to the very poor (CGAP).
NGOs involved in the direct provision of microfinance in Namibia include Women’s Action for Development (WAD), the Namibia Housing Action Group (NHAG) and the Shack Dweller’s Federation of Namibia (SDFN). At the 3rd Annual Microfinance Stakeholders Forum held in Windhoek in 2004, some of the NGOs such as SDFN were providing microfinance for smoothing consumption needs. Others such as WAD with a membership of 10,000 (including some men) were providing loans for start-up or working capital needs; while others such as NHAG were providing loans for building houses with no attention being paid to sustainability of efforts or tracking of loan repayment rates (DCD, 2004).

The second category also includes micro-lenders. In Namibia, these institutions are private initiatives that provide microfinance (specifically micro credit) and don’t rely on government or donor funding. They are scattered in urban centres all over the country and provide cash loans out of their retained earnings to help salaried individuals to smooth their consumption needs.

This category also includes the Namibia Post Office Savings Bank (NamPost). It is a savings bank that mobilises deposits, but is prohibited from lending these to any borrowers. Due to its wide outreach it has proven to be an important institution in microfinance initiatives in rural areas, and performs a similar function to the postal savings systems in the microfinance sector of other countries in Africa, such as Senegal and South Africa (Rosengard, 2001).

The third category consists of microfinance institutions that are successful in lending, and although permitted to mobilise savings from the public, choose not to do so or are unsuccessful in doing so. One reason they may be reluctant to mobilise savings from the microfinance target group is that they still believe that the poor cannot save, do not save, do not trust financial institutions or prefer non-financial forms of saving (Robinson, 1994b). These perceptions result in assumptions that the lack of demand for microfinance among low-income households will result in the unprofitability of financial operations that venture into this sector. Institutions that fall into this category are the commercial banks.

There are four commercial banks in Namibia. These are Bank Windhoek, First National Bank Namibia, NedBank Namibia and Standard Bank Namibia. Although Bank Windhoek is the only commercial bank with an independent small and medium enterprises (SME) branch,4 NedBank Namibia is involved in microfinance initiatives through Finance in Education Pty. Ltd., which is a micro-lender that it acquired in 2002. First National Bank Namibia has also begun to develop products that actively downstream into the microfinance sector. In addition, all the commercial banks provide funds to the Michelle McLean Children’s Trust, which is an NGO that is registered with NAMFISA as a micro-lender.

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4 It calls this branch the emerging, small and medium enterprises (ESME) branch.
The fourth category consists of microfinance institutions that are successful in savings but provide subsidised credit and are weak in lending, which puts the mobilised savings at risk. This is usually so because the resulting spread between interest rates on subsidised loans and rates paid on deposits is too low to cover the costs required for these institutions to mobilise savings and deliver credit effectively. In addition, these microfinance institutions tend to invest the savings they mobilise in government securities or in the inter bank markets that are associated with relatively lower rates than loans. For those that lend, losses are almost entirely attributed to poor loan repayment because subsidised loans reduce the microfinance institution’s self interest in maintaining low loan delinquency rates. Microfinance institutions in this category are typically state-owned financial institutions that channel government subsidised credit to rural borrowers.

The state-owned financial institution that falls into this category is the Agricultural Bank of Namibia (AgriBank). It is the main parastatal that implements Namibia’s Agricultural Finance Policy through the National Agricultural Credit Program (NACP) under the MAWF.

The final category consists of microfinance institutions that are successful in both savings and lending. This is usually because they have a large enough interest rate spread to cover all operating costs and risks associated with the sustainable provision of microfinance services. These microfinance institutions design credit and deposit instruments together to meet microfinance demand, and price them to enable institutional profitability. Microfinance institutions in this category consist of commercial microfinance institutions that can provide microfinance on a large-scale. There are currently no institutions in Namibia that fall into this category, but current MPCM and SCA pilot projects in Northern Namibia are aimed at creating these types of institutions.

The objective of the MPCMs is to promote sustainable livelihoods through the establishment of self-sustaining institutions (RMFTT, 2004). Their development began with the establishment of pilot projects in the southern and central regions of the country with the assistance of RISE. The lessons learned from the experiences of these pilot projects have been used in the MPCM pilot projects in the northern regions of the country.

The organisational and support structure of the MPCMs is illustrated in Figure 1 below. RISE provides technical assistance and guidance to the Regional Farmers Co-operative, which oversees the MPCMs. To cover the operating costs of the Regional Farmers Co-operative, 70% of the MPCM’s income including that received from interest accrued from savings held at NamPost is extracted. 30% of income received is kept at the MPCM level. Funding and technical assistance is provided to three promoters based within the Training and Monitoring Unit (TMU) and is not included in the overheads and operating expenses for the MPCMs (NASSP, 2005a).
Figure 1: Organisational and Support Structure for Multipurpose Cooperatives involved in the Provision of Microfinance in Northern Namibia

Source: Adapted from NASSP (2005a)

The MTISC established a microfinance scheme in 2001 known as Koshi Yomuti (under the tree). This initiative is a pilot project that had established 57 groups by December, 2004. Koshi Yomuti’s organisational and support structure is illustrated in Figure 2 below. The MTISC provides loan funding, technical assistance and grants to cover operational costs to the Koshi Yomuti head offices in Ondangwa and Oshikango, which is then disbursed by loan officers known as Avenelos (NASSP, 2005a).

In addition, the Ministry of Youth, National Youth Service, Sports and Culture in collaboration with the Commonwealth Secretariat established the Commonwealth Youth Credit Initiative (CYCI) in March, 2005.

The CYCI aims to improve the livelihood of youth through employment creation and income generation thereby alleviating poverty among the young people of the Commonwealth, by way of providing microfinance in the form of small loan advances based on identified business ideas, coupled with embedded business support services and training to youth, with the aim of creating and/or expanding income generating activities and creating jobs (Directorate of Youth Development, 2005). The CYCI is still in its pilot phase for a period of 18 months, but aims to establish 30 SCA (essentially MPCMs) by March, 2006.

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9 It is clear that the MPCM and the Koshi Yomuti models for microfinance provision are different. This report does not make any value judgement on the preference of one over the other.
2.2. The Role of Microfinance

Due to inequalities arising from Namibia’s socio-political history, improving the livelihoods of the rural population is a priority for the Namibian government as part of its effort to increase the levels of human development. In pursuit of this goal the provision of microfinance is a key instrument adopted by the MAWF to enhance the livelihood of low-income households in Namibia.

These programs envisage that financial services provided by microfinance institutions will enable low-income households engaged in pre-entrepreneurial activities and micro-enterprises and marginal, small-scale enterprises (termed simply as micro-enterprises henceforth) to increase their livelihoods. The benefits to these households and micro-enterprises should have positive implications for the Namibian macro economy.

2.2.1. Low-income Households

Microfinance provides benefits to low-income households through various channels.

Firstly, the funds transfer facilities provided by microfinance institutions enable low-income households to make payments at low costs. In Namibia, such microfinance funds transfer facilities are being provided by commercial banks such as the First National Bank of Namibia. These facilities are expected to reduce the inconvenience of having to travel long distances to effect transactions - “shoe-leather” costs.
Secondly, low-income households typically have irregular income streams and are faced with various lifecycle, structural and crisis risks that are beyond their control and can reduce their income levels below the poverty line (Wright, 1999). Empirical evidence suggests that the savings facilities provided by microfinance institutions are useful in improving household financial management, which contributes to more efficient inter-temporal decision-making. This protects low-income households against risks ahead of time, as opposed to providing support to cope with shocks after they occur through the provision of credit facilities (CGAP, 2000a). The decrease in vulnerability from unplanned shocks increases the probability that low-income households will engage in riskier, higher yielding activities that could increase their incomes.

Thirdly, in Namibia, a representative sample of respondents in a survey conducted in 2003 indicated that 49% who received money as a payment medium made use of bank accounts to store their savings (Finscope, 2003). This suggests that savings held by the remaining households are in a variety of forms such as grain, cattle, cash ‘under the mattress’, etc. (Robinson, 2003). The safe and convenient savings facilities provided by microfinance institutions enable low-income households to transform their non-financial assets into more liquid, high-yield forms that may eventually serve as collateral for larger loans (De Soto, 2000).

In addition, the use of savings facilities by low-income households enables them to store funds for future use and build credit history. This is of particular importance as many low-income households lack the types of collateral acceptable by commercial banks that are required to access loans from this source of finance, as mentioned in the previous paragraph. Furthermore, the accessibility to savings facilities provides women, in many cases for the first time, the opportunity to hold their savings in their own names (Robinson, 2003).

Finally, the flexible and convenient credit facilities provided by microfinance institutions enables low-income households to borrow funds to cover emergencies that they cannot meet from their levels of current savings. In Namibia, this benefit of microfinance is also associated with micro-lenders who lend to salaried employees in the public and private sector. When provided to low-income households, these additional financial resources result in the smoothing and stabilisation of household consumption. This can reduce the poverty gap and poverty headcount, even though real income may not increase.\textsuperscript{10}

The reduced vulnerability from risk, and stabilisation of consumption patterns arising from the use of the facilities provided by microfinance institutions, improves the quality of life in low-income households as housing, clothing and health needs are met and children are sent to school. Empirical studies in some rural areas show that

\textsuperscript{10} The poverty gap is defined as the sum of the difference between the poverty line and actual income levels of all people living below that line (Todaro, 1997), while the poverty headcount is defined as the number of people living below the poverty line.
the increase in the quality of life at the household level reduces child labour, since they are no longer forced to contribute to household income (Beegle, Dehejia & Gatti, 2003). This has positive long-term, inter-generational effects.

Improvement in the quality of life at the household level also increases productivity, which has positive implications for the income of low-income households that choose to engage in higher risk but potentially higher yielding economic activity. Even if low-income households choose not to engage in higher yielding economic activity, empirical evidence shows that the use of microfinance facilities increases the incomes of low-income households.

The resulting increase in income for low-income households can increase their self-confidence. This can be further boosted by microfinance staff showing respect in their interactions with low-income households, which displays to others that they are worthy of trust. 

Some critics argue that microfinance institutions only cater to the moderately poor and vulnerable, non-poor households. Destitute households that form the poorest of the poor category are outside the reach of microfinance programs. Others are of the opinion that additional access to credit could worsen poverty, because low-income households would be unable to repay the borrowed money, which would in turn leave them further impoverished. Then again others argue that intra-household friction may be accentuated if women secure access to credit, thus threatening traditional power structures, or if women are forced to pass the borrowed proceeds to their men, while retaining the obligation to repay (Goetz & Sen Gupta, 1996 and Rahman, 1999).

2.2.2. Micro-enterprises

Microfinance also provides benefits to micro-enterprises through various channels.

Firstly, funds transfer facilities provided by microfinance institutions also enable micro-enterprises to reduce the costs of handling payment transactions. This has positive implications for their profit levels.

Secondly, the savings facilities provided by microfinance institutions enable micro-enterprises to invest their surplus funds, while obtaining a return on their investments. This enables them to better manage liquidity and could increase their levels of self-financed investment. In addition, individual rights to these savings assets are legally recognised and can be used to meet collateral requirements.

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11 Human development encompasses three dimensions: sustenance, self-esteem and freedom Todaro, 1997).
Finally, the credit facilities provided by microfinance institutions enable micro-enterprises to borrow funds to cover various short-term financial needs, i.e. working capital. These needs include financial costs incurred during pre-start-up training, planning and start-up phases in the micro-enterprise life cycle. Microfinance can also be used to cover the financial costs of further training and to meet other unforeseen circumstances (Robinson, 2003 and Mushendami, et al. 2004).

The microfinance credit facilities enable micro-enterprise owners to use anticipated income for current investment. This reduces the vulnerability of the micro-enterprise to various shocks and stabilises the income stream for the micro entrepreneur. The reduced vulnerability promotes the sustainability of the micro-enterprise at its existing levels, to the extent that this credit is used to acquire capital (physical or human), which yields a rate of return in excess of the cost of credit. Furthermore, microfinance enhances the income of micro entrepreneurs and increases the chances that they will diversify or expand their activities.

Due to their flexibility, which allows them to better weather recessions, material shortages and market changes (Levitsky, 1993), micro-enterprises that are sustainable at their existing capacity levels provide a steady supply of affordable goods and services to the poor. If appropriately supported these micro-enterprises can be nurtured to provide high-yielding, quality products for the rich or even for export, as in the case of the Rwandese basket makers (Associated Press, 2005).

**Box 2: A Description of Three Models in the Enterprise Spectrum**

<table>
<thead>
<tr>
<th>Three types of enterprise models can be distinguished in developing countries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-entrepreneurial activities are mostly self-employment initiatives undertaken by women, in areas such as small crafts and petty trading. Pre-entrepreneurs typically have limited time to engage in full-time entrepreneurial activities, limited knowledge of the basic principles that guide any business activity and limited assets such as working capital to develop their own small business ventures. Credit may be partially reinvested in productive activities, but is mainly used to meet consumption needs.</td>
</tr>
<tr>
<td>Micro-enterprises are typically semi-structured activities that may have limited fixed assets (first or second-hand equipment) and possibly a physical location. Their owners may observe some basic management principles.</td>
</tr>
<tr>
<td>Small enterprises are structured businesses that usually have a well-defined market niche and physical location, an acceptable turnover, some business skills, regular access to market-based (fee based) business advisory services and a number of part or full time employees. They may also have legal status and a bank account. Accounting principles and financial rules may be applied in their operations.</td>
</tr>
</tbody>
</table>

Micro-enterprises are typically labour-intensive and are defined as employing 1 to 9 additional people in marginal areas (ICEG, 1999a). In a non-representative sample of 337 SMEs in Namibia, 49% employed 2 to 5 additional employees, while 22% employed 1 additional employee. However, only 5% employed additional 6 to 10 employees (Grossman, Mwatotele, Stork & Tobias, 2005). This is illustrated in Table 1 below.

Table 1: Number of Full –Time Employees for 337 SMEs in Namibia in 2004

<table>
<thead>
<tr>
<th>Employment Size</th>
<th>No. of Businesses</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 (only business owner)</td>
<td>80</td>
<td>23.74</td>
</tr>
<tr>
<td>1</td>
<td>74</td>
<td>21.96</td>
</tr>
<tr>
<td>2 to 5</td>
<td>166</td>
<td>49.26</td>
</tr>
<tr>
<td>6 to 10</td>
<td>15</td>
<td>4.45</td>
</tr>
<tr>
<td>11 to 15</td>
<td>2</td>
<td>0.59</td>
</tr>
<tr>
<td>Total</td>
<td>337</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Grossman, Mwatotele, Stork & Tobias (2005)

Although, employment in micro enterprises is rarely for anyone from outside the family, evidence from Colombia and Mexico show that employment increases due to the support of micro-enterprise initiatives (Levitsky, 1993). Although one can claim that the employment contribution per SME is marginal, from Table 1, 2 to 5 additional employees is still a great achievement and should not be dismissed.

The extent that microfinance contributes to employment creation in micro-enterprises that are sustainable at their existing levels, has wider, positive implications for poverty alleviation, because some of those who gain employment are the extremely poor. An increase in employment among the extremely poor is expected to generate a multiplier effect, since the increase in income that accompanies these jobs will enable them to make use of microfinance services (Robinson, 2003). This channel of effect leads to impact study findings that microfinance institution lending to entrepreneurs have a higher impact than those that lend to low-income households (Hulme, D. & Mosley, P. 1996 and SOCEPI, 2004).

A micro entrepreneur, who upgrades his capital equipment through credit obtained from a microfinance institution and buys a bicycle, may displace one who doesn’t and remains walking on foot (Honohan, 2004). Some critics argue that these displacement effects arising from access to microfinance could be significant and deepen existing social inequalities.
2.2.3. Macro economy

The benefit that microfinance provides to low-income households and micro-enterprises has positive implications for the overall economy.

Firstly, the provision of savings facilities deepens financial markets by mobilising savings that were not previously part of the money supply. In addition to the savings that are stored by low-income households and micro-enterprises in informal markets, some cases exist where microfinance institutions attract the finances of informal money lenders into the formal financial sector, as in the case of SAFESAVE, a microfinance institution in Bangladesh (CGAP, 2000b). This increase in gross savings creates a larger pool of resources that can be channelled to gross domestic investment opportunities, which has positive implications for economic growth.

Secondly, the increase in savings flowing into microfinance institutions increases the amount of credit available. This can lower the cost of loans relative to those offered by informal moneylenders. The benefit of this credit in reducing vulnerability in low-income households and micro-enterprises increases productivity and income. This reduces income inequalities in an economy, which has positive implications for human development initiatives. Pitt and Khandker (1998), in a study that defined households by land ownership in Bangladeshi villages, found that incomes of those admitted to a microfinance program rose to the level of those who had been excluded (who were in higher income households by its design).

Finally, microfinance is instrumental in promoting the sustainability of micro-enterprises, to the extent that it creates an improvement in the management of their financial activities. This should lead to the strengthening of the domestic production structure, which has positive implications for balanced development across different sectors and regions (ICEG, 1999b).

2.3. Microfinance Institutional Models

The ultimate goal of all poverty alleviation efforts is to improve livelihoods. There are many instruments used to achieve this. The microfinance instrument advocates two main ways i.e. the financial systems approach and the poverty lending approach.

These two approaches complement each other to improve access to financial services based on self-help, community-based groups that also provide a forum that enables interaction for social purposes (Holt, 1994). These mutual support groups form a basis for building local capacity to manage microfinance institutions in a participatory manner with the hopes of inspiring similar target groups in other areas (RMFTT, 2004).
2.3.1. Financial Systems

The financial systems approach aims to achieve maximum outreach of microfinance services through financially sustainable institutions that focus on a financial intermediation model (Robinson, 2003). The microfinance institutions under this approach provide finance to the public e.g. commercial banks; or serve only their members e.g. village banks. They finance their loan portfolios from locally mobilised savings, commercial debt and for-profit investment, or retained earnings e.g. micro-lenders.

Microfinance institutions under this approach are differentiated from informal money lenders, from unregulated institutions such as NGOs that are not registered with either the DCD or NAMFISA, and from subsidised formal micro credit – where a regulated institution such as a state-owned bank channels government or donor funds to borrowers at subsidised interest rates (Robinson, 2003).

The proponents of the financial systems approach argue that donors and governments should shift the allocation of their scarce resources from direct financing of loan portfolios, to promoting the replication of this model by disseminating lessons from the best practices of fully sustainable microfinance institutions and financing the development of more microfinance institutions of this type.

One challenge of the financial systems approach is that it relies on market approaches, which may be thin and weak in marginal areas (Pralahad, 2004). However, even in these areas, market solutions can be found to overcome any obstacles (Hitchins, Elliot & Gibson, 2005).

2.3.1.1. Village Banks

The model of microfinance provision that is most suitable for the financial systems approach is the village bank. These institutions are involved solely in the provision of microfinance and do not provide non-financial services. They include community-managed SCAs or SACCOs. SCAs or SACCOs typically consist of a general membership of 30 to 50 members based on self-selection, and an elected committee that is responsible for convening meetings, approving loans, supervising loan payments, receiving savings deposits, lending out or investing savings and keeping up-to-date records (Holt, 1994 and Nelson et al., 1996).

The design of this model is based on the Village Bank Manual by John and Marguerite Hatch (1989) – see Otero & Rhyne (1994). It consists of a sponsoring agency envisioned to require very little administrative overhead that supports several SCAs or SACCOs through promoters who train and organise them and then

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12 It is important to remember the definition of MPCMs in this section.
lend seed capital to these newly established institutions as for onlending to members who have gone through a trial period. 20% of each disbursed loan is withheld as collateral and to build a fund that is used in the future financing of new loans or collective income-generating.\textsuperscript{13} No interest is paid on share savings; instead, members receive a share of profits from the SCA’s or SACCO’s re-lending activities or other investments (dividends).\textsuperscript{14}

Where dividends are paid, these are usually low and members have little incentive to save for reasons other than to maintain their loan eligibility. If inflation rates increase microfinance institutions will be forced to substitute mobilised savings and interest bearing deposits for share savings as the primary source of capital. This can result in a gradual improvement in incentive payments for equity.\textsuperscript{15}

When members repay their first loan on time they get a second loan. However, when those applying to SCAs or SACCOs are from better off households, this model can have little impact on improving livelihoods Coleman (2002). To prevent wealthier members from gaining disproportionate access to the village bank’s capital, the model is designed to encourage members to work towards building sufficient savings to reach the external account maximum loan limit and then graduate from the program.

This model assumes that members will graduate to more formal financial institutions either as individual clients or the bank as a whole. If this does not occur, projects can be modified to establish village banks as independent, sustainable institutions at their existing capacities.\textsuperscript{16}

Although the graduation paradigm argues that the services provided by SACCOs and SCAs may not be attractive enough to attract higher-income households because loan amounts are not large enough and interest rates on savings are not favourable, it has to be noted that in developed countries these institutions are a formidable competitor to commercial banks because their lower operating costs enable them to charge lower fees for customer transactions (Curry, 1999).

\textsuperscript{13} In the literature this is termed as forced savings.

\textsuperscript{14} However, share savings are given to members if they leave the institution.

\textsuperscript{15} Of course this report is not advocating for the pursuit of a strategy aimed at increasing inflation rates.

\textsuperscript{16} It is argued that microfinance institutions should grow with their clientele by providing more complex and larger loans alongside micro loans. However, if the quality of life of the loan applicant or the performance of the micro-enterprise increases rapidly, larger institutions such as commercial banks would be best suited to meet the needs of these applications, and the microfinance institution can focus on increasing the flow of those graduating to larger financial institutions. Graduation from a microfinance program can be used as a measure of the institutions success rate in alleviating poverty, or, as an indicator of a microfinance institution that is not simply creating dependency among the microfinance target group.
Over the long-term sponsoring agencies aim to reduce promoter visits and minimise transaction costs by transferring many of the administrative aspects of providing microfinance to the SCAs or SACCOs, such that they operate independently. This allows the sponsoring agency to set up more SCAs or SACCOs in other areas.

In Namibia, the two institutions that provide microfinance services that fit within this model are Koshi Yomuti and the SACCOs supported by RISE. Koshi Yomuti is currently planning to scale up to a size that will allow it to serve the whole northern region of Namibia (NASSP, 2005a).

The village banking model is a minimalist microfinance model, i.e. no ancillary devices. However, the microfinance target group may require both financial and non-financial inputs such as health, education, nutritional support in the case of low income households and “business training to help develop micro-enterprises beyond subsistence levels that a minimalist service delivery methodology does not incorporate” (Mann, Grindle and Shipton, 1989).

2.3.2. Poverty Lending

The poverty lending approach focuses on reaching the poorest of the poor, who are typically engaged in pre-entrepreneurial activities that are more focused on consumption-smoothing than productivity enhancing activities (Honohan, 2004). This group requires assistance in the form of income transfers to meet their basic needs, because any credit extended to them will most probably be consumed rather than invested in something that generates a return sufficient to repay the debt (Rosengard, 2001).

The poverty lending approach differs from the minimalist financial services model characterised by the financial systems approach. In addition to microfinance services, it provides ancillary services such as training on nutrition, better farming techniques, family planning, health and basic financial management skills aimed at reducing the target group’s vulnerability to avoidable risk.

The funding for these ancillary services is typically provided by governments, donor grants and other subsidised funds. Previously, loan portfolios used to be funded by donors and governments and loan provision was subsidised at below market interest rates. However, increasing evidence that the microfinance target group repayment rates are not affected by market related interest rates has changed the practice of subsidising interest rates. In addition the use of ‘forced savings’ has reduced the extent to which donors and governments are required to fund loan portfolios, even if the microfinance target group is not able to save, initially.

Finally, practices have been adopted to ensure that the provision of ancillary services that target those in the pre-entrepreneurial group is done without compromising the financial sustainability of the microfinance function of the institution. This is done by making a clear distinction between the funds allocated to the provision of microfinance, and those allocated towards the provision of ancillary
services. Member savings are used to fund the former, while government and donors support is used to fund the latter.

2.3.2.1. Multi-purpose Co-operatives

The model of microfinance provision that is most suitable for the poverty lending approach is the MPCMs. They are legally constituted, co-operative financial institutions that are chartered and supervised under national co-operative legislation. MPCMs were initially set up to ensure market coordination, information provision and setting standards for agricultural purposes. In Namibia, the support services that they provide have expanded to the provision of enterprise skills training.

Co-operatives are voluntary associations of people at the grassroots level (Directorate of Youth Development, 2005). They are formed as autonomous, self-help groups aimed at assisting members who are unable to get financial services from the commercial banking sector, due to the lack of conventional collateral (RMFTT, 2004). In Namibia MPCMs offer microfinance as part of a wider set of services.

A group of co-operatives form a league. They are governed by one of four regional confederations. These regional confederations fall under an apex body called the World Council of Credit Unions (WOCCU). They are organised and operated according to the basic co-operative principles outlined below (Magill, 1994):

- members are the owners of the institutions;
- each member has the right to one vote;
- there are no external shareholders;
- policy-making leadership is drawn from the members themselves, and in new or small co-operatives these positions are unpaid.

Co-operatives have been operating in developing countries since 1950. They provide a basic set of services that cater to the pre-entrepreneurial target group, who typically can only access them from the informal sector. The valuable role MPCMs play in the provision of ancillary services is argued to be more important to their target group than credit. The provision of these additional services cannot be scaled up unless a new institution is created to provide these ancillary services and

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17 Although this report recognises that SACCOs are also co-operatives this report distinguishes them based on functional as opposed to legal definitions.

18 The African Confederation of Co-operative Savings and Credit Associations (ACCOSCA) governs the African region.
donor or government funded, pre-paid vouchers are disbursed by the co-operative to their members to access these services.

In Namibia, the role of MPCMs can shift to that of a base-level, transitional institution that provides ancillary services focusing on the provision of relevant information, training and initial microfinance that will enable the pre-entrepreneurial target group to meet their basic needs and eventually graduate to more commercially oriented microfinance services provided by SACCOs, SCAs and the higher level formal financial institutions such as commercial banks.

This report recognises that in practice there is a large amount of overlap between the co-operative and village banking model. They differ in that the latter depends on donor financing for seed capital and does not necessarily have to rely on group lending (Holt, 1994).
3. METHODOLOGY

In microfinance literature today, differences exist between anecdotal and statistical studies on microfinance (Armendariz de Aghion & Morduch, 2004). Anecdotal studies aim to show the potential of microfinance, while statistical evidence typically focuses on baseline surveys that aim to describe the potential of microfinance at a single point in time. Econometric techniques use underlying economic theory to determine the validity of anecdotal statements using statistical inference techniques applied to the information collected in baseline surveys. However, even with econometrics, it is not easy to arrive at a robust judgement on whether microfinance has a sizeable and reliable effect on the many dimensions of poverty.

One reason offered for this is that few studies include fully rigorous controls for selection biases (Littlefield, Murdoch and Hashemi, 2003). Another is that, on the demand side, the channels of effect of access to microfinance on the income, wealth, expenditure, employment or poverty reduction in low-income households are multiple. An additional reason is that microfinance may start a process of development, whose ultimate impact on income and poverty will take some time or generations to evolve. These issues may not be captured by immediate impact studies.

The challenging issues stretch into supply side studies that focus on the financial performance, sustainability, politics or management of microfinance institutions. When investigating financial sustainability which focuses on the rate of return, difficulties arise because the stated goals of some microfinance programs are usually multi-dimensional. In addition, other ancillary embedded services such as health and nutrition education programs are undertaken by the same microfinance institutions such as MPCMs and are not separated in financial reporting. This makes it difficult to isolate the overall portfolio portion allocated to provision of microfinance (Honohan, 2004).

One suggestion to solve this ambiguity is that a meta-analysis of the many impact studies be done to clarify the position, and bring more precision to the question of the exact effect of microfinance. Unfortunately, the multitude of indicators and differing methodologies makes it difficult to make comparisons across various impact studies (Honohan, 2004).

While keeping these empirical issues in mind, this section presents the methodology that this report adopted to achieve its objective. It begins with a description of the sample, data and procedure, and then goes on to describe the model and variables used to identify the factors influencing the financial sustainability of microfinance institutions in Namibia.
3.1. Sample

The scope of the formal sector microfinance institutions analysed in this report included those registered in the DCD database at the MAWF, those registered in the NAMFISA database, and those supported by the MTISC. This sample included SACCOs, MPCMs, SCAs, micro-lenders and commercial bank branches involved in microfinance provision, and some NGOs. The total sample size is illustrated in Table 2 below.

Table 2: Number of Registered Microfinance Institutions in Namibia by Location of Data as at 2005

<table>
<thead>
<tr>
<th>Institution</th>
<th>Location of Data</th>
<th>Total Number</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro-lenders, NGOs and commercial bank, microfinance branches</td>
<td>NAMFISA</td>
<td>145</td>
<td>95</td>
</tr>
<tr>
<td>SACCOs and MPCMs</td>
<td>Division of Co-operative Development</td>
<td>62</td>
<td>47</td>
</tr>
<tr>
<td>SCA</td>
<td>NASSP (2005a)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>208</td>
<td>143</td>
</tr>
</tbody>
</table>

Note: The Small Business Credit Guarantee Trust Microfinance Scheme and the Commonwealth Youth Credit Initiative were not operational at the time data collection was conducted for this study.


In 2005, there were 145 micro-lenders, NGOs and commercial bank branches providing microfinance registered in NAMFISA’s database. From this total, 45 did not have the information necessary to calculate their financial sustainability; 5 more had not issued any loans, therefore they were categorised as not operational. Therefore, the sample size for micro-lenders in this report reduced to 95.

As mentioned in Section two, the development of SACCOs and MPCMs in Namibia began with the establishment of pilot projects in the southern and central regions of the country, supported by RISE. Of these original pilot projects, 19 are still surviving; 14 of these are MPCMs. In addition to these, as of September 2004 RISE, was supporting 42 MPCMs spread over three regions in Northern Namibia (16 in Omusati, 14 in Oshana and 12 in Oshikoto), with a total membership of 1333 (NASSP, 2005a). In 2005 there were a total of 62 SACCOs and MPCMs registered in the DCD’s database, all supported by RISE. From this total, 15 did not have the information necessary to calculate their financial sustainability. Therefore the sample size for the group reduced to 47.

Finally, the sample includes Koshi Yomuti and information on this institution was drawn from NASSP (2005a).
The sample used in this report did not capture hire-purchase and trade finance, which represent forms of microcredit (Honohan, 2004). It also did not include NGOs and NGO organised self-help groups that were not registered by NAMFISA. This includes WAD, NHAG-SDFN, etc.

In addition, the sample used in this report excluded rotating and accumulating savings and credit associations (ROSCAs), burial societies, moneylenders, pawnbrokers and other informal financial institutions (i.e. not registered), AgriBank and NamPost. Furthermore, it did not include CYCI or the SBCGT microfinance schemes because they are still at their initial set up stage.

3.2. Data

The microfinance information and data used in this paper was obtained from the databases of the DCD and NAMFISA as at 2004. Additionally, a draft report commissioned by the MAWF i.e. NASSP (2005a and 2005b), a status report by RISE (2005) and Roth (2002) provided useful information that enabled this report to fill gaps in the data. This in turn enabled an application of the model chosen in this report.

However, not all the information in the databases and the secondary reports was externally audited, therefore, it may not be entirely accurate. As more reliable information becomes available this report expects the picture depicted for microfinance in Namibia to change.

All quantitative data on financial assets and liabilities was measured in real values by normalising, using the Consumer Price Index (1995=100). This allowed the report to control for the effect of inflation. Moreover, it allowed the report to measure all data relevant to the same benchmark year because the DCD database and RISE (2005) reflect 2003 data, while the NAMFISA database and NASSP (2005a and 2005b) reported 2004 data at the time of data collection.

Furthermore, data on cost structures was not available for all microfinance institutions. Therefore approximations were made for the cost structures of micro-lenders using information from a sample of 17 micro-lenders analysed in a report for NAMFISA by ECI Africa (2005). The average cost obtained from term micro-lenders where information was available was assumed to be the same for the other term

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19 The DCD database, RISE (2005) and NASSP (2005a and 2005b), provides data on RISE supported SACCOs and MPCMs, while the NAMFISA database provides data on micro-lenders, NGOs and commercial bank branches involved in the provision of microfinance. Koshi Yomuti is not currently registered with either RISE or NAMFISA, but had expressed intent at the time this report was written that it will apply for a banking license.
lenders that did not provide cost information. A similar estimation was done for the other smaller micro-lenders. For the RISE supported institutions, average cost information drawn from the NASSP (2005a) was assumed to be equal for all SACCOs and MPCMs.\(^{20}\) Cost information for Koshi Yomuti was also drawn from NASSP (2005a).

Default rate data for RISE supported SACCOs and MPCMs was calculated for each institution using information from RISE (2005). NAMFISA cited an estimated default rate for all micro-lenders and NASSP (2005a) also cited an average default rate for all groups. The provision of disaggregated data down to the institutional level from NAMFISA and each group supported by FIDES, would have greatly improved the accuracy of the financial sustainability estimates. As these become available the methodology presented in this report can be reapplied on this more reliable dataset.

3.3. Model

This report adopted an ANCOVA model whose general form is specified as follows:\(^{21}\)

\[
FINSUS = f (\text{REGUL, ORGFORM, FLXREP, DONEQ, GROUP, SAVE, LOANS, PCY}) + \epsilon
\]

**Equation 1: General Function for ANCOVA model**

Where:

- \(FINSUS\) represents the absolute value of the residual, break even, real interest rate required to attain financial sustainability;

- \(\text{REGUL}\) is a vector of dummy variables representing whether the microfinance institution is supported by RISE, the MTISC or registered with NAMFISA;

- \(\text{ORGFORM}\) is a vector of dummy variables representing whether the institution is incorporated as a limited company, closed corporation, SACCO, SCA, MPCM or special purpose co-operatives i.e. street vendor or teachers’ co-operative;

- \(\text{FLXREP}\) is a vector of dummy variables that represent whether loan repayments are made weekly, monthly or every 6 months;\(^{22}\)

\(^{20}\) According to NASSP (2005a) and comments arising in the focus group presentation of the draft for this report, the cost of promoters of SACCOs and MPCMs are not included in the institutional overheads and expenses.

\(^{21}\) See Appendix A for a technical discussion of the model and its variables.

\(^{22}\) MPCMs and SCAs enforce weekly repayment schedules (NASSP, 2005a), while SACCOs and most micro-lenders enforce monthly repayment schedules. A few microlenders enforce term repayment schedules i.e. six months to three years.
DONEQ is a dummy variable representing whether donors provided start up capital for loans;

GROUP is a dummy variable representing whether the microfinance institution uses a group lending, service delivery strategy in their institutional model;

SAVE is the amount of savings in constant 1995 NAD mobilised by the microfinance institution;

LOANS is the amount of loans in constant 1995 NAD disbursed by the microfinance institution;

PCY is the per capita income of the area where the microfinance institution is located in constant 1995 NAD;

\( \varepsilon \) is the random error term.

To identify the factors that influence the financial sustainability of selected microfinance institutions in Namibia, OLS was applied to a cross-sectional dataset based on equation (1) above using LIMDEP version 7.0, an econometric software. The findings of this report are discussed in the next section using the above outline.
4. RESULTS AND DISCUSSION

This section describes the results based on an application of the model described briefly in the previous section and in more detail in Appendix A. This is coupled with an associated discussion.

4.1. Financial Sustainability

This report used the residual, break-even, interest rate to represent financial sustainability. This is defined as the absolute value of the difference between the maximum, nominal interest ceiling allowed by the Usury Act (approximately 30% per year in Namibia) and the break-even interest rate required by the microfinance institution to achieve financial sustainability.

\[ FINSUS = \left| r_{\text{max usury}}^* - r^* \right| \]

Equation 2: Definition of Financial Sustainability

Where:

- \( r_{\text{max usury}}^* \) represents the maximum nominal interest rate allowed by the usury rate
- \( r^* \) represents the break-even interest rate

The choice of the break-even interest rate in this report was based on the definition of financial sustainability, which envisions that a financially sustainable microfinance institution will need to cover all its costs and risk provisions from the interest income that it generates. To calculate this break-even interest rate the report adopted the method used by Hulme & Mosley (1996). It is described in more detail in Appendix B.

This report found that for the period captured by the dataset all the selected microfinance institutions in this report were financially unsustainable. This is illustrated in Figure 3 below. They were not charging interest rates that were high enough to cover all financial and non-financial costs, and risks of their operations.

It is important to note that the finding of financial unsustainability, across the board for microfinance institutions in Namibia, based on the formula adopted in this report is not surprising, because the interest rates required to break-even usually exceed the ceiling prescribed by Usury Acts in most countries (Hulme & Mosley, 1996). Due to the finding that no microfinance institution in Namibia is currently, independently financially sustainable, this report focused on degrees of financial unsustainability. Therefore, a higher absolute value signified a higher level of unsustainability.
Figure 3: Real Financial Unsustainability of Selected Microfinance Institutions in Namibia by Category

Source: NEPRU calculation based on Appendix A

Figure 3 above shows that term micro-lenders as a category have the lowest degree of financial unsustainability when compared to all the SACCOs and SCAs. However, this could partly be explained by the fact that the SACCOs and SCA category consists of institutions that are still in pilot stages, which is typically associated with high costs and low-income (Honohan, 2004). It is important to emphasise that the high degree of financial unsustainability for MPCMs is because they are currently the only category of microfinance institutions that provide both financial and non-financial services, for which data is available. 23

To identify the factors that influence financial unsustainability for selected microfinance institutions in Namibia, the methodology described in the previous section was applied to the available data. The results are presented in Table 3 below.

---

23 Michelle McLean Trust also provides both financial and non-financial services, but a disaggregated exposition down to institutional level is beyond the scope of this report.
Table 3: Regression Results for ANCOVA Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>p-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>RISE</td>
<td>-0.46774E+16</td>
<td>0.3437</td>
</tr>
<tr>
<td>NAMFISA</td>
<td>-0.7271E+15</td>
<td>0.8554</td>
</tr>
<tr>
<td>MTISC</td>
<td>-1.667E+16</td>
<td>0.8265</td>
</tr>
<tr>
<td>SAC</td>
<td>-0.1557E+15</td>
<td>0.449</td>
</tr>
<tr>
<td>MULTI***</td>
<td>0.14235E+15</td>
<td>0.0752</td>
</tr>
<tr>
<td>SPECIAL</td>
<td>-0.1577E+15</td>
<td>0.3995</td>
</tr>
<tr>
<td>CC</td>
<td>-0.51085E+15</td>
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</tr>
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<td>LTD</td>
<td>-0.51085E+15</td>
<td>0.5711</td>
</tr>
<tr>
<td>TRUST</td>
<td>-0.51085E+15</td>
<td>0.3480</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>-0.51085E+15</td>
<td>0.3562</td>
</tr>
<tr>
<td>WEEKLY</td>
<td>-0.17627E+16</td>
<td>0.2695</td>
</tr>
<tr>
<td>MONTHLY</td>
<td>0.1238E+16</td>
<td>0.7020</td>
</tr>
<tr>
<td>TERM</td>
<td>0.1238E+16</td>
<td>0.6984</td>
</tr>
<tr>
<td>DONEQ***</td>
<td>-1.5377</td>
<td>0.0869</td>
</tr>
<tr>
<td>GROUP***</td>
<td>0.50067E+16</td>
<td>0.0739</td>
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<td>LSAVE</td>
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<tr>
<td>LLOAN</td>
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<td>0.6387</td>
</tr>
<tr>
<td>LPCY</td>
<td>-0.0003344</td>
<td>0.6429</td>
</tr>
</tbody>
</table>

F [17, 126] = 21.74; p-value = 0.0000  \( R^2 = 0.745754 \)
No. of Observations: 143

Note: * significant at the 1% level, ** significant at the 5% level, *** significant at the 10% level.

4.2. Level of Support

The number of selected microfinance institutions in Namibia's microfinance sector, by supporting agency is illustrated in Figure 4 below.
While co-operatives are closely monitored and supported by RISE or the MTISC, micro-lenders are independent, private, organisations that are only regulated to the extent that NAMFISA requires them to be registered and comply with the Usury Act. Therefore, the identity of the governing body can serve as a proxy for the level of active direct support to the microfinance institution.

Figure 4 above indicates that most microfinance institutions in Namibia are registered with NAMFISA. This suggests that independent, microfinance institutions dominate those that are directly supported.

Due to the hands off approach adopted by NAMFISA, it is theoretically expected that microfinance institutions governed by this body will have a positive relationship to financial unsustainability, while those supported by RISE or the MTISC will be negatively related to financial unsustainability due to the closer support they receive.

However, the model adopted in this report does not confirm to this theoretical expectation. From Table 3 it can be seen that the model does not identify a clear relationship between differing levels of support, since the signs of the coefficients of the variables capturing support by RISE and MTISC, or registration under NAMFISA, all have a negative sign.
Although, the negative sign could indicate that on average support by RISE or MTISC, or registration under NAMFISA, is negatively (positively) related to financial unsustainability (sustainability); all the variables are statistically insignificant at the 5% or 10% level. Hence, based on the model adopted in this report, there is no evidence that support by RISE or MTISC, or registration under NAMFISA, influences the financial sustainability of the selected microfinance institutions.

### 4.3. Form of Incorporation

In finance literature, the principal-agent theory argues that the form of institutional incorporation should have an effect on the behaviour of its managers and how they are influenced by external stakeholders (Myers & Majluf, 1984).

The form of incorporation for selected microfinance institutions included in this report is illustrated in Figure 5 below. This figure shows that the most common form of incorporation in the microfinance sector was the MPCM, while the least common was the SACCO (these have open common bonds and exclude teachers or street vendors’ co-operatives) or SCA – collectively termed as SAC. In addition, the form of incorporation of a large number of microfinance institutions (mostly micro-lenders) was not known.

![Figure 5: Forms of Incorporation for Microfinance Institutions in Namibia](image)

Note: * consist of teachers or street vendors’ co-operatives

Source: DCD and NAMFISA databases and NASSP (2005a) and RISE (2005)
Table 3 shows that SACs and special purpose co-operatives i.e. teachers or street vendors’ co-operatives (these have closed common bonds) are negatively (positively) related to financial unsustainability (sustainability). However, based on the model in this report, there is no evidence that being a SAC or special purpose co-operative influences financial sustainability, because the coefficients of the variables capturing these forms of incorporation are insignificant at the 5% or 10% level.

Table 3 also shows that MPCMs are positively (negatively) related to financial unsustainability (sustainability). Based on the model in this report, there is evidence that this relationship is robust because the coefficient of the variable capturing this form of incorporation is significant at the 10% level.

This finding implies that if the cost of providing non-financial services is managed and separated from that of providing financial services, financial sustainability should improve for this category. Government or donor financing can be used to cover the non-financial service provision costs of MPCMs that focus on other areas of the poverty alleviation toolkit, such as the provision of health, nutrition, training, etc., as long as the operational costs of these non-financial services are kept separate from those of microfinance service provision.

In addition, Table 3 also shows that the forms of incorporation common to micro-lenders i.e. closed corporations, trusts and proprietary limited, are negatively (positively) related to financial unsustainability (sustainability). However, based on the model in this report, there is no evidence that the form of incorporation for micro-lenders influences financial sustainability, because the coefficients of the variables capturing the forms of incorporation common to micro-lenders are insignificant at the 5% or 10% level.

### 4.4. Flexibility of Repayment Schedule

In Namibia, MPCMs and SCAs typically offer loans over a 6 month to 1 year period, but the repayments are weekly (NASSP, 2005a). The micro-lenders provide monthly, non-revolving loans, while a few offer micro credit ranging from 6 months to 3 years. It is important to note that the more flexible repayment schedules for micro-lenders are coupled with strong loan delinquency control methods, such as having direct access to the payroll of their clients or their personal identification number (PIN).

The flexibility of repayment schedules for selected microfinance institutions in Namibia is illustrated in Figure 6 below.

---

24 Comments arising in the focus group discussion state that SACCOs collect on loans monthly.
The flexibility of the repayment schedule is theoretically expected to influence financial sustainability to the extent that it affects the effective rate of interest, which in turn has an effect on the break-even interest rate. To the extent that a more frequent repayment schedule generates a higher effective interest rate, a weekly payment schedule should be negatively (positively) associated with financial unsustainability (sustainability).

This theoretical expectation highlights the trade-off between aiming to provide more flexible microfinance credit products for customer satisfaction while reducing costs of frequent collection and reducing risk when designing microfinance products from an institutional perspective. It is argued that in the pursuit of lower cost for the microfinance institution through less frequent collection schedules and higher levels of customer satisfaction through more flexible repayment terms, microfinance institutions should not lose sight of the need for stronger loan delinquency control systems to prevent moral hazard from creeping in that may lead to the collapse of the microfinance institution.

Table 3 shows that the coefficient of the variable capturing the weekly repayment schedule has a negative sign, while that of the monthly and term repayment schedules have a positive sign. Although this conforms to the theoretical expectation based on the model adopted in this report, there is no evidence that these relationships are robust because none of the coefficients of the variables
capturing the flexibility of the repayment schedule are significant at the 5% or 10% level.

4.5. Donor Involvement

Donor involvement in providing start-up funds for the loan portfolio of microfinance institutions in Namibia was a feature of the original RISE supported pilot projects for establishing microfinance in Namibia. The funding averaged approximately NAD 9,800 and was provided to 9 SACCOs and MPCMs that are still existing and registered with the DCD. Although, this approach was abandoned in the more recent pilot projects in northern Namibia, it is interesting to include this variable as a post-mortem analysis.25

Table 3 shows that the coefficient sign of the variable capturing provision of donor start-up equity suggests that donor involvement in providing start-up funds for the loan portfolio is negatively (positively) associated with financial unsustainability (sustainability). In addition, based on the model in this report, there is evidence that this relationship is robust because the coefficient of the variable capturing donor support is significant at the 10% level.

This finding implies that donor provision of start-up equity can boost the probability that a microfinance institution will be financially sustainable. However, this report strongly qualifies this statement by reiterating that the definition of financial sustainability is the ability to cover cost independent of external subsidies from donors or government. The formula adopted to calculate financial sustainability in this report does not focus on the sources of funds used to cover costs, and does not differentiate between donor and government funds or self-generated funds.

4.6. Group Lending

In Namibia, only the SACCOs, SCAs and MPCMs are involved in microfinance delivery through groups.

According to theory, group lending is expected to positively influence financial sustainability for microfinance institutions because the peer pressure that group members exert on each other should lead to lower default rates on the number of loans disbursed.

Table 3 shows that group lending positively (negatively) influences the financial unsustainability (sustainability) of microfinance institutions. In addition, there is

25 Koshi Yomuti is included in this category of donor involvement because it provided the start-up funds for the loan portfolio and that was still the case when this report was written; although there may be future plans to find strategies to reduce dependence on donor and government funds.
evidence that this relationship is robust because the coefficient of the variable that
captures group lending is significant at the 10% level.

Although this differs from the theoretical expectation, it can be explained by the fact
that micro-lenders that do not rely on a group lending methodology to deliver
microfinance have much lower degrees of financial unsustainability in Namibia
compared to SACCOs, SCAs and MPCMs, when taken as a category. Furthermore,
loans by micro-lenders in Namibia are made to individuals who are salaried
employees. These microfinance institutions have direct access to the payroll of their
clients in urban areas, which gives them very strong loan delinquency control over a
clientele that is arguably not as risky as those that are in the more marginal areas.

Therefore, in the attempt to test the relationship between the group lending
methodology in microfinance service provision and financial sustainability, the model
adopted in this report highlights the identity of microfinance institution as opposed to
the theoretically posited relationship.

Despite this finding, it is important to note that where an individual delivery strategy
is chosen, it should be done on a case by case basis and gradually, because it has
proven to be a powerful tool in the more vulnerable target groups, i.e. where group
cohesion is not strong – Grameen bank model.

The positive coefficient of the group lending variable could also suggest that group
lending strategies can be complemented by the adoption of credit and risk
management tools.

4.7. Savings Mobilised

In Namibia, the SACCOs, SCA and MPCMs mobilised savings from their clientele.
Over the sample period, only one of the microfinance institutions falling into this
category did not mobilise savings. The real amount of savings mobilised by
SACCOs, SCA and MPCMs in Namibia is illustrated in Figure 7 below.

The amount of savings mobilised is theoretically expected to influence the financial
sustainability of microfinance institutions, to the extent that they increase interest
expense and cost of the microfinance institution, or to the extent that they provide
credit information that can be used to assess the eligibility of a borrower and reduce
the costs of the lending process for the microfinance institution. These effects work
in opposite directions.
The negative sign of the coefficient that captures the savings component shown in Table 3 suggests that savings is negatively (positively) related to financial unsustainability (sustainability). This could suggest that the benefit of savings in reducing the cost of the lending process outweighs the cost of interest expenses for the microfinance institution. However, based on the model in this report, there is no evidence to suggest that the mobilisation of savings influences the financial sustainability of the selected microfinance institutions in Namibia, because the coefficient is not significant at the 5% or 10% level.

4.8. Loans Disbursed

In Namibia, the value of loans disbursed in constant 1995 NAD is quite substantial. This is presented in Figure 8 below. It is important to note that the amounts presented are averages for each category, therefore the more institutions in the category the lower the average real loans disbursed.
Figure 8: Real Amounts of Loans Disbursed by Microfinance Institutions by Category

Source: RISE (2005), NASSP (2005a), DCD and NAMFISA databases,

The amount of loans disbursed is theoretically expected to be negatively (positively) related to financial unsustainability (sustainability) because it reduces per unit cost of the lending.

Table 3 shows that the coefficient of the variable that captures the amount of loans disbursed confirmed the expected theoretical relationship. However, based on the model adopted in this report there is no evidence to suggest that this relationship is robust because this variable is not significant at the 5% or 10% level.

4.9. Per Capita Income

Per capita income of a location reflects the welfare and socio-economic profile of its residents. The more income the microfinance clientele has, the higher the probability that a microfinance institution serving this target group will be financially sustainable. According to this theoretical perspective per capita income is expected to be negatively related to the financial unsustainability of microfinance institutions in Namibia.

The relative per capita incomes for the locations of microfinance institutions in Namibia are presented in Figure 9 below.
Factors Influencing the Financial Sustainability of Selected Microfinance Institutions

Figure 9: Real Per Capita Incomes for Microfinance Institutional Locations in Namibia in 2004

Based on the model in this report the coefficient of the variable that captures the per capita income of the microfinance target group has the expected negative sign. However, based on the model in this report there is no evidence to suggest that this relationship is robust because the per capita income variable is not significant at the 5% or 10% level.

Since microfinance is aimed at serving the marginalised members of a society, this finding implies that there is no evidence that a lower per capita income in the

Source: Authors’ own Calculations Based on Central Bureau of Statistics (2003)\(^\text{26}\)

\[ \text{Real GDP in 2004} \times \frac{\text{population of location in 2001}}{\text{overall population in 2001}} \]

\(^{26}\) The formula used to calculate per capita income of each location is
microfinance target group will hinder the financial sustainability of the selected microfinance institutions in this report.
5. CONCLUSION

This research report focused on the fourth key principle of microfinance by attempting to identify factors that influence the financial sustainability of selected microfinance institutions in Namibia.

The report found that the microfinance industry has shown significant signs of activity over the past few years. Nonetheless, according to the definition of financial sustainability adopted in this report, it was found that all the selected microfinance institutions in Namibia are not yet financially sustainable.

Out of all microfinance institutions included in this report, the degree of financial unsustainability was lowest for term micro-lenders, and was highest for MPCMs. The high degree of financial unsustainability for the MPCMs may be partly attributed to the fact that they are currently the only category of microfinance institutions included in this report for which data was available, that were providing both financial and non-financial services. In addition, they do not separate the costs of providing non-financial services from that of financial services provision in their reporting to the Registrar of Co-operatives.

The high degree of financial unsustainability for MPCMs is confirmed with evidence based on the model adopted in this report, which indicates that MPCMs are negatively related to financial sustainability. This finding implies that if the cost of providing non-financial services is managed and separated from that of providing financial services, financial sustainability should improve for this category.

This report’s finding of financial unsustainability, across the board, for microfinance institutions in Namibia is partly attributed to the fact that the interest rates microfinance institutions require to break-even exceed the ceiling imposed by the Usury Act of 1968. Although, this finding empirically justifies the claim that the Usury Act of 1968 is the regulation that has the most impact on the financial sustainability of microfinance institutions in Namibia, the raising of the ceiling is not a clear policy option.

The Usury Rate option highlights the conflict between efforts to protect borrowers from the adverse social impact of overwhelmingly high interest rates and efforts to increase access to financial services. Due to its important role in protecting the borrowers from overwhelmingly high interest rates, alternative ways to reduce the degrees of financial unsustainability should be explored before the Usury Act is amended. Based on the formula used to calculate financial sustainability in this report, the alternative options available include finding innovative ways to reduce costs, increasing the number or size of loans disbursed (without compromising the loan portfolio), or reducing default rates.

The model implemented in this report also provides evidence that donor involvement in providing start-up funds for the loan portfolio is positively associated with financial
sustainability. However, this report strongly qualifies this statement by reiterating that the definition of financial sustainability is the ability to cover costs independent of external subsidies from donors or government. The formula promoted to calculate financial sustainability in this report does not focus on the sources of funds used to cover costs and does not differentiate between donor and government funds or self-generated funds.

In the attempt to test the relationship between the group lending methodology in microfinance service provision and financial sustainability, the model used in this report highlights the identity of microfinance institution as opposed to the theoretically posited relationship that group lending should positively influence financial sustainability for microfinance institutions. This suggests that to reduce the default rate, group lending strategies can be complemented by the adoption of credit and risk management tools.

Furthermore, the model adopted in this report does not find evidence that a lower per capita income in the microfinance target group will hinder the financial sustainability of the selected microfinance institutions in this report.

Finally, but most importantly, this report identified that improving the reliability of reported information for the selected microfinance institution is a key issue that needs to be addressed by both regulators and practitioners. Apart from structure, ownership and control, another key criterion of good governance is public timely and full reporting of an institution’s activities and results (Graham Bannock & Partners, 1997). The collection of more complete information for each institution by the governing bodies will allow them to more accurately and effectively apply the method used in this report to monitor progress towards attaining financial sustainability among microfinance institutions in Namibia.
6. REFERENCES


Appendix A: Technical Discussion

The estimated function this report estimated is specified below as follows:

$$\ln FINSUS = \beta_1 \text{RISE}_i + \beta_2 \text{NAMFISA}_i + \beta_3 \text{MTISC}_i + \beta_4 \text{SAC}_i + \beta_5 \text{MULTI}_i$$
$$+ \beta_6 \text{SPECIAL}_i + \beta_7 \text{CC}_i + \beta_8 \text{LTD}_i + \beta_9 \text{TRUST}_i + \beta_{10} \text{UNKNOWN}_i + \beta_{11} \text{WEEKLY}_i$$
$$+ \beta_{12} \text{MONTHLY}_i + \beta_{13} \text{TERM}_i + \beta_{14} \text{DONEQ}_i + \beta_{15} \text{GROUP}_i + \beta_{16} \ln \text{SAVE}_i$$
$$+ \beta_{17} \ln \text{LOAN}_i + \beta_{18} \ln \text{PCY}_i + \epsilon_i$$

Equation 3: Estimated Function for ANCOVA model

Equation (3) did not include an intercept term to avoid perfect multicollinearity because no default categories were specified.

Heteroscedasticity

Heteroscedasticity refers to the condition where the disturbances, $u_i$, appearing in a population regression function all have different variances.

$$E(u_i^2) = \sigma_i^2 \quad i = 1, 2, 3, ..., n$$

Equation 4: Heteroscedasticity

An analysis of the residual arising from the estimation of the specific function in the ANCOVA model indicates that heteroscedasticity existed in the dataset used in this report. This is illustrated in Figure 8 below. To correct for this, the robust covariance matrix procedure in LIMDEP was used.

![Figure 10: Graphical Test for Heteroscedasticity](image-url)
Multicollinearity

Multicollinearity refers to a condition where the explanatory variables are linearly intercorrelated either perfectly or less than perfectly as follows:

$$\lambda_1 X_1 + \lambda_2 X_2 + \ldots + \lambda_k X_k = 0$$

Equation 5: Multicollinearity.

Multicollinearity is a feature of any econometric model and is only a problem if it is severe. Severe multicollinearity is defined as a case where the explanatory variables have a correlation factor exceeding 0.8 (Gujarati, 2003). Since our dataset consists of zero-one dummy variables, it is not easy to apply standard tests of multicollinearity such as correlation matrices or auxiliary regression analysis to assess multicollinearity, therefore this report adopted the “do nothing” school of thought to deal with multicollinearity (Blanchard in Gujarati, 2003).
Appendix B: Financial Sustainability

Hulme & Mosley (1996) demonstrate the break even condition for a financial institution over a period of time, which they define as a state where net income is at least equal to total expenditure. The formula, the authors use to calculate the break-even condition in the form of an interest rate is:

\[
\hat{r} = \frac{(\beta - \alpha) + i + a + \alpha p + (Z - Y)}{1 - p}
\]

Equation 6: Definition of the Break-even Interest Rate

Where:

\( \hat{r} \) represents the break-even, loan interest rate.

\( \beta \) represents the share of the principal of each loan that has to be paid back per time period by the lender.

\( \alpha \) represents the share of the principal of each loan that has to be paid back per time period by the borrower.

\( i \) represents the effective interest rate paid per unit of principal on borrowing and savings deposit. \(^{27}\)

\( a \) represents administrative cost per unit of principal.

\( p \) represents the expected default rate on loan i.e. expected losses due to non-repayment of principal and interest on a loan. \(^{28}\)

\( Z \) represents non-loan expenditure attributed to training, outreach work, etc.

\( Y \) represents non-loan income attributed to training, outreach work, etc.

By assuming that the share of principal that has to be paid back by the borrower and lender each period is the same \((\beta = \alpha)\) and that non-loan income is equal to expenditure \((Z = Y)\) equation (6) reduces to:

\[
i = \left(1 + \frac{\hat{r}}{m}\right)^{m/t} - 1
\]

\(^{27}\) Although a rough estimate of the average default rate for SACCOs founded by RISE based on Roth (2002) is >63% [>70 (North) and >56% (South)]. This report assumes a 50% default rate [(0.5 x 100) + (0.5 x 0)] because no robust documented information is currently available,
Equation 7: Formula for Break-Even Interest Rate

This reduced form equation does not incorporate slow-burning returns, gradual build-up of amount borrowed and the use of borrowed resources for risk reduction, or other non-measurable benefits (Honohan, 2004). In addition, it assumes that the return on the amount borrowed (excess over interest costs) is fully reinvested every month by the microfinance institution during the months of the program participation, and also that there is no borrowing by non-members. Finally, it does not differentiate the provision of financial from non-financial services by microfinance institutions.

An Example:

If a microfinance institution charges 34% on micro loans taken over six months, the effective interest rate \( i \) on these loans will be:

\[
i = \left[ 1 + \left( \frac{i}{m} \right)^{mt} \right] - 1
\]

\[
= \left[ 1 + \left( \frac{0.34}{2} \right)^{2 \times 1} \right] - 1
\]

\[
= 0.3689
\]

\[
i = 36.89\%
\]

If \( i = 36.89\% \); \( a = 0.694262 \); \( \alpha = 100\% \) and \( p = 5\% \). Then the break-even interest rate for this microfinance institution derived from the Equation (4) above is:

\[
r^* = \frac{0.3689 + 0.694262 + (1 \times 0.05)}{1 - 0.05}
\]

\[
r^* = 1.236847
\]

\[
r^* = 124\%
\]

This report calculated the financial sustainability of each microfinance institution in the sample using equation (7). Therefore, for the institution in the example above:

\[
FINSUS = 30\% - 124\% = -84\%
\]
### Appendix C: Descriptive Statistics for Variables in ANCOVA model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Mean</th>
<th>Standard Deviation</th>
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<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FINSUS</td>
<td>Natural log of residual real interest rate required to break-even</td>
<td>-0.42163</td>
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<td><strong>REGUL Variables</strong></td>
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<td>RISE</td>
<td>Dummy equals one if microfinance institution is supported by RISE</td>
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<td><strong>ORGFORM Variables</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SAC</td>
<td>Dummy equals one if microfinance institution is registered as a savings and credit co-operative (and is not a special purpose co-op) or is identified as a savings and credit association</td>
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<td>0.1174</td>
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<td>MULTI</td>
<td>Dummy equals one if microfinance institution is registered as a multi-purpose co-operative</td>
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</tr>
<tr>
<td>SPECIAL</td>
<td>Dummy equals one if microfinance institution is registered as a special-purpose co-operative i.e. street vendors or teachers only.</td>
<td>0.01388</td>
<td>0.1174</td>
</tr>
<tr>
<td>CC</td>
<td>Dummy equals one if microfinance institution is registered as a closed corporation</td>
<td>0.2986</td>
<td>0.45924</td>
</tr>
<tr>
<td>LTD</td>
<td>Dummy equals one if microfinance institution is registered as a proprietary limited</td>
<td>0.0625</td>
<td>0.2429</td>
</tr>
<tr>
<td>TRUST</td>
<td>Dummy equals one if microfinance institution is registered as a trust</td>
<td>0.01388</td>
<td>0.1174</td>
</tr>
<tr>
<td>UNKNOWN</td>
<td>Dummy equals one if form of registration of microfinance institution is unknown.</td>
<td>0.29167</td>
<td>0.45611</td>
</tr>
</tbody>
</table>
### FLXREP Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Coefficient 1</th>
<th>Coefficient 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEEKLY</td>
<td>Dummy equals one if loans to the microfinance institution are repaid weekly.</td>
<td>0.3125</td>
<td>0.4651</td>
</tr>
<tr>
<td>MONTHLY</td>
<td>Dummy equals one if loans to the microfinance institution are repaid monthly.</td>
<td>0.6597</td>
<td>0.47545</td>
</tr>
<tr>
<td>TERM</td>
<td>Dummy equals one if loans to the microfinance institution are repaid in 6 months to 3 years.</td>
<td>0.0277</td>
<td>0.1649</td>
</tr>
</tbody>
</table>

### Other Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Coefficient 1</th>
<th>Coefficient 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>DONEQ</td>
<td>Dummy equals one if donors provided start-up capital to fund the loan portfolio of microfinance institution</td>
<td>0.625</td>
<td>0.2429</td>
</tr>
<tr>
<td>GROUP</td>
<td>Dummy equals one if a group strategy is incorporated into the microfinance institutional model</td>
<td>0.3333</td>
<td>0.473</td>
</tr>
<tr>
<td>LSAVE</td>
<td>Natural log of savings mobilised by microfinance institutions in constant 1995 NAD</td>
<td>3.1652</td>
<td>1.535</td>
</tr>
<tr>
<td>LLOAN</td>
<td>Natural log of loans disbursed by microfinance institutions in constant 1995 NAD</td>
<td>6.50729</td>
<td>2.6936</td>
</tr>
<tr>
<td>LPCY</td>
<td>Natural log of real per capita income of a microfinance institution's location in constant 1995 NAD</td>
<td>6.2482</td>
<td>1.2563</td>
</tr>
</tbody>
</table>

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