Analysis of Performance of Sample Microfinance Institutions in Nigeria

Abdulsalam Ahmed

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

Master of Science
in
Banking and Finance

Eastern Mediterranean University
February 2014
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Elvan Yılmaz
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Science in Banking and Finance.

Prof. Dr. Salih Katırcıoğlu
Chair, Department of Banking and Finance

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis of the degree of Master of Science in Banking and Finance.

Assoc. Prof. Eralp Bektaş
Supervisor

Examining Committee

1. Prof. Dr. Salih Katırcıoğlu
2. Assoc. Prof. Eralp Bektaş
3. Assoc. Prof. Nesrin Özataç

ABSTRACT

This paper aims to analyze the performance of microfinance institutions (MFIs) from sustainability and outreach points of view. Random-effects GLS regression-Robust and Fixed-effects (within) regression- Robust analysis have been carried out employing a panel dataset of 64 MFIs in Nigeria. These MFIs willingly report their financial and operational data to Microfinance Exchange (MIX), a non-profit private institution with the objective of strengthening financial inclusion by disseminating performance information of microfinance sector worldwide. This study reveals that the MFIs will cover their cost without necessary increasing the number of loan officer for each borrower and the same time without increasing the number of female borrowers in their books. Also when the number of borrowers increases it is better for MFIs to increase their OSS. The result shows that PAR 30 will be properly checked and maintain with the increase of log of loan officer per borrower.

The log of return on equity in our estimates shows significant when the MFIs ensures decrease in portfolio at risk past due 30 days and when CAR is getting down. Cost efficiency is significant when other variables are constant.

The result depicts that the sample MFIs attain breadth of outreach while the cost per borrower reduces and lastly, for the MFIs to increase the depth of outreach PAR30 will also increase.

Keywords: Microfinance Institutions, Operational Self-Sufficiency, Random-effects and Fixed-effects.

ÖZ

Bu çalışma, görüş sürdürülebilirliği ve sosyal açılardan mikrofinans kurumları (MFI) performansını analiz etmeyi amaçlamaktadır.GLS regresyon-Sağlam ve Sabit etkiler içinde regresyon analizi aynı zamanda bunun etkileri 64 MFI bir panel veri kullanılarak Nijerya'da yapılmıştır.

Bu çalışma rastsal ve sabit etkiler regresten modelleri kullanılarak , 64 Mikrofinans kurumu (MFI) için yapılmıştır.

Çalışma MFI'ların kredi yöneticileri ve kadın borçluların sayısını arttırmadan maliyetlerini düşürdüklerini göstermektedir.Borçlu sayısındaki artışın ise MFI'in sürdürülebilir olmasını sağlamaktadır. PAR30 ise borçlu sayısının artması ve kredi yöneticilerinin sabit kaldığı durumlarda ise artış göstermektedir. Riskle sermaye getirisi arasında negatif bir ilişki varken maliyet etkinliği de önemli bir bulgu olarak ortaya çıkmıştır.

MFI'ların daha çok sayıda müşteriye ulaşmaları ise maliyet ve riskleri azaltmaktadır.

Anahtar Kelimeler: Mikrofinans Kurumlar, Operasyonel Öz-Yeterlilik, Rastsal etkiler, Sabit etkiler.

DEDICATION

This project is dedicated to the entire family of late Alkali Abba.

ACKNOWLEDGEMENT

First, praises be to Allah for given me good health and opportunity to study M.Sc. My profound gratitude goes to Associate Professor Eralp Bektaş my supervisor who gives me the necessary support and guide to make this study successful. And also to all faculty staff of the department of banking and finance who impacted more knowledge to me.

I'm also indebted to my friends I met on this island such as Omer Bashir Banga, Murad A. Bein, Emre Gunes, Savas Turan, Augustine Dohbit Sama and others too numerous to mention.

To my family, I said thank you to my mum, my wife, brothers and sisters for their prayers and support.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

ALBB	Average Loan Balance per Borrower
CAMELS	Capital Asset Management Earnings Liquidity and Sensitivity to risk
CAR	Capital to Asset Ratio
CB	Community Bank
CBN	Central Bank of Nigeria
CDA	Community Development Association
CFI	Conventional Financial Institutions
DER	Debt to Equity Ratio
FB	Female Borrowers
FEAP	Family Economic Advancement Programme
FGN	Federal Government of Nigeria
FPI	Financial Performance Indicator
FSS	Financial Self- Sustainability
GDP	Gross Domestic Product
LA	Log of Asset
LBLO	Log of Borrower per Loan Officer
LCPB	Log of Cost per Borrower
LFC	Log of Financial Costs
LGL	Log of Gross of Loan
LNAB	Log of Number of Active Borrowers
LOE	Log of Operating Expenses

LNB	Log of Number of Borrowers
LNLO	Log of Number of Loan Outstanding
LPAR30	Log of Portfolio at Risk >30 days
MFB	Microfinance Bank
MFI	Microfinance Institution
MIX	Microfinance Information Exchange
NACB	Nigeria Agricultural Bank
NACRDB	Nigerian Agricultural Co-operative and Rural Development Bank
NAIC	Nigeria Agricultural Insurance Cooperation
NAPEP	National Poverty Eradication Programme
NBCBN	National Board for Community Banks of Nigeria
NDE	National Directorate of Employment
NGN	Nigerian Naira
NGO-MFI	Non-Governmental Organization Microfinance Institution
OELP	Operating Expenses to Loan Portfolio
OSS	Operational Self-sufficiency
PAR30	Portfolio at Risk > 30 days
PBN	Peoples Bank of Nigeria
ROSCA	Rotating Savings and Credit Association
ROA	Return on Asset
ROE	Return on Equity
SEEP	Small Enterprises Educational & Promotion
SHG	Self Help Group

USD	United State Dollar

Chapter 1

INTRODUCTION

Microfinance Institutions (MFIs) are specialized institutions that provide financial services to low income groups or individual; such as savings, micro-credit, and other services with the aim of improving the economic status of small-scale producers, both in the rural and urban areas. Microfinance is basically to make financial services accessible to the poor who are conventionally not served by the standard formal financial sector.

The Central Bank of Nigeria (CBN, 2005) noted that the formal financial sector provides services to about 35% of the frugally alert populace as the staying 65% are excluded from accessing the financial services. The formal institutions encompassed such institutions as the Nigerian Agricultural, Co-operative and Rural Development Bank (NACRDB) formerly, (now Bank of Agriculture), Bank of Industry, and conventional (commercial) banks. It is imperative to note that the larger balance of the populace not assisted by the formal sector is frequently assisted by the semi-formal and informal sector. The semi-formal institutions encompassed in this dispensation include; non-governmental association microfinance institutions (NGO-MFIs) and the community banks (which is now transformed into the MFBs). The NGO-MFIs are organizations registered by law and governed by the articles of association/bye laws. Their boards of

trustees are usually the founders or elected delegates, they often render financial service as well as the non-financial service such as charity and community development projects. MFBs (formerly community banks) are formed by the Community Development Associations CDA and individual shareholders to provide the financial services thereby promoting rural development. MFBs have Board of Directors that are elected by shareholders at the annual general meetings. They are for profit making. The informal micro-financial sector mainly encompassed the Self-Help Groups (SHG), that contain-Rotating Savings and Credit Associations (ROSCAs) innately denoted to as "ISUSU" or "ETOTOS" (Igbos) "ESUSU" or Bam (Yoruba) or "ASUSU" (Hausas), different groups come together as union/associations such as farmers, traders, town coalitions and relations or kith and kin associations. These associations played significant role in the rural areas. They give loans to their members without physical collaterals but communal assurances or guarantors.

The Federal Government of Nigeria (FGN) has, in the past, commenced a sequence of publicly-financed micro/rural credit programmes and strategies targeted at the poor. Some of the notable ones were the establishment of the National Directorate of Employment (NDE), Nigerian Agricultural and Co-operative Bank Limited (NACB), the Nigerian Agricultural Insurance Corporation (NAIC), the Family Economic Advancement Programme (FEAP) the Peoples Bank of Nigeria (PBN), Community Banks (CBs), the National Poverty Eradication Programme (NAPEP) among others. In order to empower the active poor by providing financial services that will improve their standard of living. However, there were reforms that took place to restructure those

institutions to perform better such as merger of FEAP and PBN in 2000 to become the Nigerian Agricultural Cooperative and Rural Development Bank Limited (NACRDB).

The community banking scheme was introduced in December 1990, a minimum paid-up capital of N5 million (31,476.26 USD) was required to obtain a CB operating license. The authority to regulate and present provisional license to the CBs was subordinated by Central Bank of Nigeria to the National Board of Community Banks in Nigeria (NBCN). Between 1990 and 1997 the NBCN issued provisional licenses to 1,366 CBs. The CBN was saddled with the responsibility of granting final operating license to CBs that had prosperously worked for a minimum of two years period. Even though most of the CBs were able to grasp their target marketplace (lower conclude of the population), the performance was not encouraging and a momentous number of them were poorly managed (CBN 2002). In order to make the financial services accessible to the active poor the CBN introduced a new microfinance policy, regulatory and supervisory framework in December, 2005 targeted to provide affordable and dependable financial services to the economically active poor, to promote synergy and mainstreaming of the informal micro-financial sub sector to the main formal financial system. The policy also derived strategies which include the license and supervision (regulation), promoting savings and banking culture among the low income household, government participation by encouraging the three the tiers of government to devote atleast1% of their annual budget.

1.1 Aims and Objective

The aim of this study is basically to analyze the performance of sample microfinance Institutions in Nigeria.

1.2 Problems of the Study

The problem of the study is to ascertain whether MFIs are covering their cost of operations or not. Because of the institution's nature that involved granting small loans to the active poor.

1.3 Significance of the Study

In order to create a sustainable institution, MFIs managers need to have the skills to analyze the financial health of their MFI. Evaluating the key financial performance indices (FPIs) in this study is probable to be beneficial for microfinance lenders and investors. The MFIs (lenders) should adjust the different FPIs for achieving self-sustainability in the long run. Investors as well can benefit in making decision.

1.4 Thesis Structure

This thesis is organized in 5 chapters as follows: Chapter one we present the background of the study, aims of the study, problems and significant of the study. Chapter two discusses the related literature review of different authors with regard to the concepts and theories of MFIs. Chapter three gives the over view of the Nigeria financial sector, the microfinance policy framework of the CBN and prudential guidelines. Chapter four presents the data, methodology use in this study and discusses the result of the analysis. Chapter five gives the conclusion.

Chapter 2

LITERATURE REVIEW

There is considerable literature on the performance of microfinance institutions by different scholars around the world.

The main business of Microfinance Finance Institutions (MFIs) is to provide financial services by accepting savings deposit and giving out loan to grow small scale businesses in order to empower low income earners which in turn generates employment and alleviate poverty. According to Central Bank of Nigeria (2005), Microfinance services are offered from all the three types of financial sector namely; the formal, semi-formal and informal financial sectors. The services provided by both the formal and semi-formal are known as the institutional microfinance. The concept of microfinance was examined from another perspective by Robinson (1995), who defined as financial service mainly loan and saving, extended to the farmers, fishermen, herdsmen that operate small or micro enterprise, to artisans, to who work for wages, and to other individuals and groups both in the rural and urban area of developing countries. This definition clearly shows the type of people that are likely to benefit from the microfinance institutions.

Similarly, it indicates that the developing countries need microfinance institution most than the developed countries. Otero and Rhyne (1994) viewed microfinance as a system

that involves the large scale provision of small loans and deposit services to greater number of active poor, there is need by the members of microfinance institution to allow for increase in capital to cover a wide needs of the low income earners. Microfinance is viewed as a vital tool for creating employment, increasing the productivity and household income of active poor. Ledgerwood (2000), viewed microfinance as an economic empowerment approach targeted to benefit low income group both men and women. It reveal that purpose of microfinance is reaching out the low income brackets in the urban or rural areas irrespective of gender and create wealth for them. A microfinance finance service is considered playing an important role in poverty alleviation and economic development as noted by Olawepo (2002).

The similarity among all the definitions above is that microfinance institution provides financial services to the low income household and people operating small business in order for them to improve their standard of living.

According to Dichter (1999) who reviewed applied literature on microfinance programs across the World observed that the programs are judged by the extent of their financial service outreach to the poor and their financial sustainability. Since the birth of the Grameen Bank in the early eighties several countries in Africa, South America, the Pacific and the root continent Asia have followed up with one form or another of the Grameen bank model. The transformation that is taking place in the life of the poor as a result of the strategies adopted by microfinance institutions is on the increase in many countries. Bangladesh, India, South Pacific and Brazil, Mexico in Asia and South America; Mali, Burkina Faso, Benin, South Africa, Egypt, and others in Africa have all

reported significant achievements to reducing poverty as a result of interventions by microfinance programs (Yaron, 1992; Von Pischke, 1996; World Bank, 2007).

Morduch (2005) suggested that for microfinance to attain growth and continue to provide services on a long run it needs to improve outreach. Sustainability is almost the same with outreach. Yaron, (1999). Sustainability is described as the ability of an institution to remain financial sound despite if grants and donations are not available (Woolcock, 1999). Because growth of any MFIs depends on the volume of resources generated which is positively correlated with the outreached achieved by the microfinance.

2.1 Paradigms of Microfinance Institutions

Hamada (2010) postulated that there has been shift in the operations of microfinance institutions from a social movement to the integration into the banking sector. That the first shift was in the 1980s where MFIs concentrated on product- centered lending with single product and the second paradigm in the 2000s where they shifted to client-centered lending with more variety of product. The latest shift signals for commercialization of MFIs in an attempt for sustainability in the long run. Research conducted by Ayayi and Sene (2010) on 223 MFIs revealed that credit risk management was determining factor for financial performance. It is important to control cost. Interest rate had to be reasonably high to cover cost. In addition they discovered that use of relevant information and good banking practices and information systems facilitate sustainability.

Crombrugghe, Tenikue and Sureda (2007) deduced three important factors for sustainability such as loan repayment, cost-control or efficient use of resources and

financial self –sustainability or operational self-sustainability. Agarwal & Sinha (2010) revealed that it is important for microfinance institutions to be sustainable in order to carry out its objectives with good financial performance. Yaron (1992) outlines alternative steps in which formal financial services assessment in terms of actual cost and outreach to the low income earners as follows: 1. Total loans running and the average loans disbursed, 2 volume of savings and the average saving deposits, 3. The different product of services 4. The numbers of offices and cash centers, 5 percentage of total number of customers served 6.The Real value of annual growth of assets over the years. 7. Female customers' participation. Ledgerwood (1999) narrowed outreach measures under three classifications: 1. Customers and staff outreach, 2. Loans outreach, 3. Deposit outreach.

Carcia and Olivié (2003) detail assorted useful and hypothetical reasons that clarify the conflict between outreach and complete self-sufficiency. They concluded that institutions that focus on the outreach will normally have to give up the attainment of finished self-sufficiency, unless they depend on subsidies. On the other hand, they find that the most lucrative microfinance institutions rely on methodologies comparable to those of conventional banks. MFIs advances small loans to low income population, and coupled with the development of microfinance institutions and increasing competition, yet the MFIs have limited access to fund. The study concludes that self-sufficient MFIs are the strong performers of ROE and ROA.

Despite the accomplishment of many MFIs and amid increasing commercialization of this sector, however, a large fraction of poor people in many developing countries still remains unreached (Christen, Rosenberg, and Jayadeva 2004). Primarily due to high operating costs and capital constraints within the MFIs, there is indeed a challenge to meet from the supply-side (Helms 2006).

2.2 Distinct of Microfinance Institutions from Conventional Banks

MFIs are specialized financial institutions with some peculiarities and unlike conventional financial institutions (CFIs) they are constrained by double bottom lines: encountering social obligations (the first bottom line) and obtaining financial self-reliance (the second bottom-line) (Hartarska 2005). MFIs differ from CFIs in many other ways. Located primarily in poverty-ridden rural areas, MFIs pave the way that banks should go to the poor not the other way round. Unlike development banks in previous times, MFIs take a market-based approach to provide small-sized, mostly collateral-free and women-focused lending for serving the poor on a sustainable basis. MFIs' innovative loan products and methodologies also attempt to win over the typical credit market problems of asymmetric information and moral hazard. These help meeting their social and financial obligations (Morduch, J and Armendaritz de Aghion, B. 2005).

Consequently, unlike definitions given in corporate finance, performance of MFIs bears a slightly different connotation and frequently encompasses two broad aspects – self-sustainability and the outreach to the poor – both of which have additional dimensions. MFIs' self-sustainability is evident, among others, in their profit efficiency and cost-efficiency. Profitability or sustainability of a microfinance institution is measured by Financial Self-Sufficiency (FSS), Operational Self Sufficiency (OSS), Return on Assets

(ROA) and Return on Equity (ROE). Both FSS and OSS basically measure how the institutions cover its administrative cost through client revenues. ROA and ROE measure how well the microfinance institution utilizes its total assets and equity capital respectively to generate returns (Hartarska 2005). MFIs' outreach to the poor, in turn, is measured in two further extended dimensions– breadth and depth (Navajas et al. 2000; Schreiner 2002; Hartarska 2005).

Breadth in effect means the number of clients to whom microfinance services are provided, and is normally expressed in terms of (natural) logarithm of active borrowers. MFIs' breadth of outreach is clearly different from a market penetration type of measurement that is used in CFIs because market penetration is just the number of customers as a percentage of the total. Since MFIs are constrained by double bottom lines and, generally, attempts to meet the supply-side challenge, increasing coverage or the size of poor-clientele base is very important. Depth of outreach means the quality of outreach to the poor and is generally measured by three variables – average loan amount, average loan amount adjusted by GNI (or GDP) per capita and percent of female loan clients.

2.3 Financial Performance Indicators in Microfinance Institutions

Today, evaluating financial performance indicators (FPIs) in microfinance sector have much importance to the capital market and the shareholders. Several NGOs are transforming into profit making banks. Numerous national and international financial institutions are joining the microfinance sector business, to attain both financial performance and social performance. Many existing MFIs were reorganized to enable their growth and financial sustainability.

According to Tucker and Miles (2004) Microfinance can be sustainable by either moving up the interest on loan, commissions or both the two. However, raising the costs for customers probably increases the default rate. Increase in the cost of loan might not benefit the low income house hold rather subject them to been marginalized. In the same study, it was mentioned that microfinance institutions use the CAMELS technical note in their financial reporting. CAMELS' stands for capital adequacy, assets quality, management efficiency, earnings, liquidity and sensitivity to market risk as shown in Table 2.1.

Table 2.1: Performance indicators for banks CAMELS

Capital Adequacy	**Asset quality**	**Management efficiency**	**Earnings profitability**	**liquidity**	**Sensitivity risk**
CAR	NPL/Total Loans	Profit per branch unit	Return on Asset	Cash and Bank balances to Assets	value of stock
		Profit per employee	Return on Equity		
		Non-interest income to Non-interest expense	NIM		

A study by Luzzi and Weber (2006) to measure performance of microfinance institutions, they used only OSS variable for the financial performance and five different variables for the outreach performance that includes; number of female clients (borrowers), average loan to GNI per capita, number of active borrowers in group, asset based collateral and poverty conditions to reach customers. They utilized factor scrutiny methodology to craft synthetic indices of both outreach and sustainability. The authors selected to compute both the financial and the social performance of microfinance institutions, employing a goal programming-based multi-criterion technique. This technique comprises linear or nonlinear functions with continues or discrete variables in that all the functions have been channeled into goals or objectives. It defers from the normally utilized solitary criterion performance rankings by carrying a global estimation of the performance of an MFI, joining the individual criteria in such a method as to contain all the groups that alter its performance.

Microfinance financial performance evaluation ought to not be extremely disparate from computing other financial institutions financial performance, for example the banks. According to the SEEP (2010), they describe standards for computing microfinance institutions financial performance. The determinant factors are analyzed in five groups, as illustrated in Table 2.2. Majority of these ratios are similarly used to compute financial performance of banks.

Table 2.2: Standard ratios in microfinance reporting.

Capital adequacy and solvency	**Asset quality**	**Sustainability and profitability**	**Productivity and efficiency**	**Savings liquidity**
DER	NPL past 30 days due	Portfolio yield	Active borrower per staff	Loans/deposit ratio
Equity to Assets	Write off ratio	NIM	Average deposit account balance	Cash ratio
Cost of funds adjusted	NPL past 30 days due + write off ratio	ROA	Portfolio asset	
Uncovered capital ratio			Average deposit balance per borrower per credit officer	
Average loan disbursed cost income to customer drop out percentage			Cost per active borrower outstanding loan	

Source: SEEP, 2010

In a study by Armendariz and Morduch (2010), they choose six financial indicators (ratios) to ascertain MFIs financial performance beyond group lending. These includes; Return on asset, Return on equity, OSS ratio, FSS ratio, yield on loan (real) and

portfolio at risk > 90 days. Furthermore, many preceding studies on the evaluation of financial performance of microfinance institutions, uses the combination of ratios mention above.

The meanings of two ratios that are specifically use in computing the financial performance of MFIs are as follows:

Operational self-sufficiency ratio (OSS) indicates whether or not enough revenues have been earned to cover the expenses. It is financial revenue divide by (financial expenses plus loan losses provision plus operating expenses). It is expressed in percentage.
An OSS< 100% shows that microfinance institution depends largely on outside funding (borrowing) to carry out its operation.

An OSS = 100% shows microfinance institutions' full operational self-sufficiency.
An OSS >100% shows that microfinance institution is sound enough to continue operations without any subsidies.

The Financial self-sufficiency ratio (FSS) makes further adjustment to the operating income and expenses to indicate whether or not the MFI could continue to earned income that can cover its expenses without depending on subsidies or cost of capital if financing by debt. FSS ratio is expressed in percentage also.

Crombrugghe et al, (2007) , described the Operational performance or sustainability in their study as the ability to cover expenses and to continue operations without depending

on subsidies, grants, donations or without keeping depositors savings illiquid. They divided financial performance into three components; namely, loan repayment, operational or financial self-sufficiency and cost control.

Chapter 3

AN OVERVIEW OF MICROFINANCE INSTITUTIONS IN NIGERIA

The practice of microfinance in Nigeria has been for decades even before the modern banking. The traditional microfinance renders credit for the rural and urban, low income household. They are mainly the informal sector SHGs, ROSCAs that are form for the mutual benefit of their members. The micro and small business entrepreneurs depend on the informal financial sector for funds which makes a platform for informal institutions to serve the populace based on informal social networks. Microfinance has three features that distinguish it from the formal financial products;

1. Smallness of the loan granted out and or deposit received in,
2. Lack of asset based collateral and
3. Simplicity in the operations.

The Central Bank of Nigeria (CBN, 2011) has approved the revised microfinance policy framework for Nigeria, the policy categories microfinance banks into three. Unit microfinance banks, State microfinance banks and National Microfinance banks (MFBs). The unit microfinance banks are stipulated with a minimum capital requirement of 20 million NGN (125,904.94 USD). They are restricted to carry out business in one location without having branches or cash office. The state microfinance banks, according to the revised policy are authorized to operate within one state or the federal

capital territory and are allowed to open branches or cash centers within the same state. The minimum paid up capital for the state MFB is 100 million NGN (629,524.68 USD). The last category national microfinance banks have minimum paid up capital of 2 billion NGN (12,590,493.69 USD) and that they are allowed to open branches or cash offices anywhere in the country.

3.1 Economic Indicators

According to (Bamisile, 2006) contribution of micro credit to the GDP of Nigeria in 2005 was only 0.2 percent; it was also 0.9 percent of total credit. The greater numbers of MFIs are situated in the south and eastern region of the country to the detriment of the northern zone that have predominantly low-income household. The reason for introducing a new microfinance policy was out of conviction that poverty alleviation and capital empowerment could not be achieved hence the focus on small and medium-scale enterprises, (Soludo, 2008). The policy provides platform that will increase employment opportunities and household income of active poor in the country thereby improving standard of living.

According to (Anyanwu, 2004) on the study of outreach performance of MFIs in Nigeria, it is revealed that the interest rates charged by the Microfinance institutions seems to be high but still the active poor are willing to draw down the loan and repay. This justifies the fact that their financial needs are paramount irrespective of the high interest rate. Some microfinance charged as much as 48%, others 42% and 32% while the conventional banks' prime lending rate as at December, 2003 ranges between 19.5% - 21.6%. The MFIs rates are far higher than the prevailing rates in the banks may be

because of the high operating costs, uncertainty in loan repayments and lack of traditional collateral.

3.2 Prudential Guidelines

The regulatory framework for microfinance is a guide that defines some rules which stipulates conditions for establishing and operating microfinance institutions that aspires to mobilise deposits from the public. In 2005, as part of its official responsibilities, the CBN drafted some set of prudential rules, provide a legaI framework for MFBs to ensure safety in their operations so that objectives and essence of microfinance is accomplished. Some major components of the prudential guidelines include;

- Capital adequacy ratio: this is the percentage of banks capital and reserves to total assets: normally used to measure risk exposure of a bank. The minimum CAR for MFBs is 10 percent.
- Liquidity ratio: Liquidity usually, measures a firms ability to service immediate demand of cash. MFBs are required to maintain a minimum liquidity ratio of 20 percent of total deposit liabilities. In addition, the institutions are compelled to invest 5 percent of it's total liability in the treasury bills.This will ensure that frequent request for funds by customers and operating cost are adequately met.
- Provision for loan losses: Loan loss is an expense set aside as allowance for bad loans which may arise from customers default on repayment. MFBs are mandated to provide for loan losses in line with CBN preference. 1 percent of performing assets is required to be written off as bad debt. The provision requirement is classified as shown below:

Table 3.1: Classification of risk assets and provision requirement

Number of default days	Assets classification	Provision requirement
0	Performing	1%
1-30 days	Pass and watch	5%
31- 60 days	Substandard	20%
61-90 days	Doubtful	50%
91 or more days including restructured loans	Lost	100%

Source: CBN (December 2005)

It is expected all MFBs to check their books for the status of their risk assets atleast once in every 30 days and make necessary provision for loan losses.

- Statutory reserve requirements: The reserve fund is set aside by banks to meet any unexpected costs that may arise in the future as well as the future operating costs.MFBs in Nigeria are required to maintain a reserve fund which is to be derived out of the net profits for each year before dividends are declared. Where MFBs have a reserve fund below 50 percent of paid up capital transfer to reserve must not be less than 50 percent.Where reserve fund for the bank is more than 50 percent of the paid up capital but lower than 100 percent of the paid up capital, the transfer out of net profit should not be less than 25 percent and where the bank has a reserve fund graeter than 100 percent of paid up capital, funds to reserve should not fall below 25 percent.

- Reserve requirement ratio: This requirement by the regulatory authority CBN regarding the amount of fund that banks must hold in reserve againgst deposits made by their customers. Unlike the conventional banks in Nigeria the madatory reserve requirements is not applicable to MFBs instead the investment of 5 percent of total deposits and liabilities in the tresury bills.

Most of the guidelines are similar to those of the conventional banking institutions.However, it is important to note that the regulatory framework within which the MFBs operate is different from that of the commercial bank and other institutions. The weight of the sanction on non adherence is lighter, more flexible and the supervision is less strict compared to the conventional banks regulation and supervision.

Chapter 4

DATA SOURCE

Secondary data was extracted from the public domain of Microfinance Information Exchange (www.mixmarket.org), a non-profit making organization that makes available financial and social performance of about 2,000 MFIs across the world. The MFIs willingly submit to Mix Market their audited annual reports and outreach reports, all individual currency are converted into US dollar with the prevailing exchange rate.

The study utilizes a panel dataset on 64 MFIs in Nigeria, although not representative of the entire microfinance institutions in Nigeria, but represents MFIs that are able to do self-reporting of relevant information regarding their internal operations. The data cover annual reports from 2000 to 2012. However, the number of time period *t*, is not the same for the individual MFI *i*, Thus, making it unbalanced panel and some variables missing in the data set.

4.1 Methodology

The methodology of this study is regression analysis, which enables us to evaluate the role of each factor that determines operational performance and the outreach performance as specified for the microfinance institutions. Panel regression deals with multi-dimensional data that contained observations of measurements obtained over multiple time periods for the same firms or individuals. The use of logarithm (log) is

adopted in this study to form efficient estimations of variables in the models. All the missing variables that are omitted and believe to be correlated with other explanatory variables were analyzed by the Fixed Effect (FE) regression and those that are not omitted and also believed not to be correlated were analyzed by Random Effect (RE) regression in order to make them unbiased. In deciding between the FE and RE, we run a Hausman's test on each of the models.

4.2 Model Specification

The regression model below is used

$Y_{it} = \beta Cons + \beta X1_{it} + \beta X2_{it} + \beta X3 \ldots + \varepsilon_{it}$ ……. (1)

Where Y is the dependent variable, *i* denote for individual MFIs, *t* stands for time period, X1, X2… are explanatory variables, β is coefficient of constant and explanatory variables and ε stands for error term.

4.3 Definition of Explanatory Variables

Yield on Gross Loan (YGL)

Yield on gross loan (YGL) is an indicator of revenue; it measures revenue from loan portfolio (i.e. interest charged on loans). It can be explained as adjusted financial revenue from loan portfolio/ adjusted average gross loan portfolio.

Female Borrowers (FB)

Female borrowers (FB) represent the number of active women borrowers /adjusted number of active borrowers. Women participation is more recognize in the MFIs because they are perceived to be creditworthy and also fits a poverty-fighting empowerment.

Borrower per Loan Officer (BLO)

Borrower per loan officer (BLO) indicate efficiency, it is adjusted number of active borrowers/ number of personnel.

Average loan Balance per Borrower (ALBB)

Average loan balance per borrower (ALBB) is outreach indicator it is explained as adjusted gross loan portfolio/ adjusted number of active borrowers.

Portfolio at Risk >30 days due (PAR30)

Portfolio at risk >30 days due (PAR30) is an indicator of risk and liquidity can be explained as outstanding balance portfolio overdue > 30days + renegotiated portfolio/ adjusted gross loan.

Operating Expenses to Loan Portfolio (OELP)

Operating expenses to loan portfolio (OELP) also indicates efficiency and can be explained as adjusted operating expenses / adjusted gross loan portfolio.

Financial Cost (FC)

Financial cost (FC) indicator of expenses is measured by adjusted financial expenses/ adjusted average total assets.

Capital to Asset Ratio (CAR)

Capital to asset ratio (CAR) indicator of financing structure is explained as adjusted total equity/ adjusted total assets.

Number of Active Borrowers (NAB)

Number of active borrowers (NAB) is an outreach indicator it is the number of borrowers with loan outstanding, adjusted for write-off.

Number of Loan Outstanding (NLO)

Number of loan outstanding (NLO) is explained as the number of loans outstanding adjusted for standardized write-offs.

Debt to Equity Ratio (DER)

Debt to equity ratio (DER) is also indicator of financing structure is explained as adjusted total liabilities/ adjusted total equity.

Cost per Borrower (CPB)

Cost per borrower (CPB) measures efficiency, it is explained as adjusted operating expense/ adjusted average number of active borrowers.

Total Assets (A)

Total Assets (A) is the sum of total asset adjusted for inflation and standardized provision for loan losses and write-offs.

Gross Loan (GL)

Gross loan (GL) is the total loan portfolio, adjusted for the standardized write-offs.

The first model is for sustainability regression;

$$OSS = \beta Cons + \beta\,(YGL)_{it} + \beta\,(ALBB)_{it} + \beta\,(FB)_{it} + \beta\,(LBLO)_{it} + \beta\,(LNLO)_{it} + \beta(LNB)_{it} + \beta(LLO)_{it} + \varepsilon_{it}$$

Standard error robust is carried out in this regression to clear all possible auto correlation and heteroscadascity. This does not change the coefficient but change the t-statistics and standard errors to the fittest.

The same process is repeated for the delinquency regression model, profit efficiency, cost efficiency, breadth outreach and depth outreach models.

4.4 Panel Unit Root Tests and Results

The unit root test is carried out to see whether a time series variable is non-stationary or stationary using auto regressive model. In this study, all the variables in the panel regression were tested using Fisher-type test; rejecting the null hypothesis and accepting the alternative hypothesis that means unit root is free from exhibiting non-stationary.

Although there are some unit roots in a few variables, since sample is not large they are not expected to have significance influence on the result and moreover, we used robust standard error in regression analysis.

Philip Perron test was carried out but because of the gap due to the unbalance data we used the Fisher-test.

4.5 Results and Discussion

The study focus on six indicators of performance, out of it four determines performance while two determines the outreach which is also social performance in the MFIs. Firstly, the regression explains the self-sustainability position reached by the MFI;

Operational self-sufficiency ratio (OSS) measures the extent that operating income of a microfinance institution covers its operating expenses.

Table 4.1: Sustainability regression- (Dependent variable: Operational Self-Sufficiency)

OSS	Co-eff.	Std. Err.	z	P>|z|	[95%Conf.Interval]	
YGL	.0611491	.4076021	0.15	0.881	-.7377363	.8600345
ALBB	.0701917	.0337089	2.08	0.037	.0041235	.13626
FB	-1.336248	.4427483	-3.02	0.003	-2.204018	-.4684768
LBLO	-13.70068	2.376552	-5.76	0.000	-18.35864	-9.042724
LNLO	-.1042872	.0307731	-3.39	0.001	-.1646014	-.043973
LNB	31.94881	5.47776	5.83	0.000	21.2126	42.68502
LLO	-13.81548	2.344853	-5.89	0.000	-18.41131	-9.219651
CONST	1.260179	.3078528	4.09	0.000	.6567985	1.863559

Random-effects GLS regression- Robust
Number of observations: 32
R-sq: Within = 0.7027

In Table 4.1, the sustainability regression in which OSS is the dependent variable, showed R-sq. within of 0.7027. The Average Loan Balance per Borrower (ALBB) is significant at 0.037 and a positive coefficient of .0701917 this means the more ALBB increases the more operating revenue is generated to cover cost thereby making MFIs to be sound and operational sustainable. Female Borrowers (FB) is significant with mean of 0.003 with negative coefficient of 1.336248. The percentage of female borrowers does not increase OSS. Log of Borrowers per Loan Officer (LBLO) and Log of Number of Loan Outstanding (LNLO) are significant with mean of 0.000 and 0.001 respectively with negative coefficients of 13.70068 and 1.1042872 respectively. Log of Number of Borrowers (LNB) is significant with 0.000 and positive coefficient of 31.94881. Here it means that increase in LBLO lower the operational self-sufficiency because it will be

difficult to get proper monitoring of loan repayments if too many borrowers are assigned to a single loan officer which will eventually lead to default and income leakages. The LNLO is expected to be reducing in the loan register, in another words increase in loans outstanding signals non-performing of loans and will impact negatively on the OSS. It is imperative to distinguish between gross loan and loans outstanding. LNB, increase in customer base of MFIs by giving out loans to greater number of borrowers improves OSS tremendously. Processing fee, management fee, quarterly fee, etc. are usually charged on every loan disbursed this boosts the income profile of the institution. The Log of Loan Officers (LLO) is significant with prob. Values of 0.000 and negative coefficient of 13.81548. Increasing loan officers involves increase in cost for staff salaries and allowances, training and development, etc. These will decrease the revenue of the institution. Yield on Gross Loan (YGL) is positively related but insignificant.

Table 4.2: Delinquency regression-(Dependent variable: Performance at Risk 30 days past due)

PAR30	Co-eff.	Std. Err.	z	P>|z|	[95%Conf.Interval]	
YGL	.0771872	.0491032	1.57	0.116	-.0190533	.1734278
FB	-.0464193	.1232337	-0.38	0.706	-.2879529	.1951143
LBLO	.0314614	.0110791	2.84	0.005	.0097469	.053176
LFC	-.0336159	.0119646	-2.81	0.005	-.057066	-.0101658
ALBPB	-.0079416	.0196166	-0.40	0.686	-.0463894	.0305062
CONST	.001236	.1621484	0.01	0.994	-.3165689	.3190409

Random-effects GLS regression- Robust
Number of observations: 29
R-sq: Within = 0.4406

Secondly, Table 4.2 indicated positive relation and significant in the Log of Borrower per Loan Officer (LBLO) this means that increase in LBLO will not only reduce sufficiency of revenue in the previous analysis of OSS but also increase loan default of PAR30. Since MFIs basically grant loans to its customers, hence, it is paramount for the bank management to allocate adequate number of borrowers per loan officer depending on the size of the clientele to ensure proper credit management. The Log of Financial Cost (LFC) is also significant at 0.005; an increase in LFC will decrease the dependent variable by 0.0336159. This means that for PAR30 to decrease financial cost need to be incurred. Expenses such as fueling pool cars to carry out visitation and telephone calls to borrowers that are likely to default in loan repayments. Credits in MFIs typically have no asset backed collateral which make them vulnerable to default. They are often disbursed to clients that organize themselves in group (i.e. group lending) and each group member guaranteeing repayment of another. Also part of security arrangement in MFIs include undertaking for domiciliation of sales proceed from the borrowers business to the account daily or weekly because of the short tenor of loan in the microfinance sector.

It also revealed that Yield on Gross Portfolio (YGL), Female Borrower (FB) and Average Loan Balance per Borrower (ALBB) are insignificant. The R-sq. within for the model is 0.4406.

Table 4.3: Profit efficiency regression- (Dependent variable: Return on Equity)

ROE	Co-eff.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
CAR	1.618695	2.014356	0.80	0.430	-2.558825	5.796214
PAR30	-6.010243	2.591845	-2.32	0.030	-11.3854	-.6350847
LA	.2458403	.2133398	1.15	0.262	-.1965994	.6882799
CONST	-2.969136	3.727136	-0.80	0.434	-10.69874	4.760471

Fixed-effects (within) regression- Robust
Number of observations: 40
R-sq: Overall = 0.5596

Thirdly, in the profit efficiency we use return on equity hence ROE measures how the firms are efficient in generating profits for the owners' equity. Using Return on Equity (ROE) as the dependent variable, Table 4.3 shows Capital to Asset Ratio (CAR) is insignificant 0.430 and positive coefficient of 1.618695. Portfolio at Risk 30 (PAR30) is significant at 0.030; an increase in PAR30 reduces ROE by 6.010243. This means that for MFIs to generate profit for equity holders, the PAR30 need to be low.

Log of Assets (LA) 0.262 is insignificant to this model with positive co-efficient of .2458403. The R-sq. within is 0.5596.

Table 4.4: Cost efficiency regression-(Dependent variable: Operating Expenses to Loan Portfolio)

OELP	Co-eff.	Std. Err.	Z	P>|z|	[95%Conf.Interval]	
CAR	.9578053	.9020773	1.06	2.40	-.8102337	2.725844
DER	-.009094	.0155942	-0.58	0.560	-.0396581	.0214701
LPAR	-.0629821	.0445505	-1.41	0.157	-.1502994	.0243353
LA	-.0538505	.0332945	-1.62	0.106	-.1191065	.0114055
CONST	.8485826	.3532526	2.40	0.016	.1562202	1.540945

Random-effects GLS regression- Robust
Number of observations: 35
R-sq: Within = 0.8837

Fourthly, the cost efficiency which measures the optimum result for expenditure. Table 4.4, Operating Expenses to Loan Portfolio (OELP) as dependent variable, shows that Capital to Asset Ratio (CAR) have positive coefficient of 0.9578053 and insignificant prob. value of 2.40. While the Debt to Equity Ratio (DER) and Log of Portfolio at Risk (LPAR30) is both negatively related to the dependent variable by -0.009094 and -0.06984 respectively and insignificant with 0.560 and 0.157 respectively. Log of Asset (LA) is insignificant 0.106.

All the explanatory variables in the model above are insignificant except the constant with positive coefficient of .8485826. The R-sq. within is 0.8837.

Table 4.5: Breadth of outreach regression- (Dependent variable: log of number of active borrowers)

LNAB	Co-eff.	Std. Err.	Z	P>|z|	[95%Conf.Interval]	
CAR	-.0911737	.2420354	-0.38	0.706	-.5655544	.383207
DER	.0002742	.0064797	0.04	0.966	-.0124258	.0129743
LGL	.6598294	.1024881	6.44	0.000	.4589564	.8607023
LA	.320619	.1188629	2.70	0.007	.0876521	.553586
LCPB	-1.005292	.0625533	-16.07	0.000	-1.127894	-.8826893
LOE	1.02665	.0319013	32.18	0.000	.9641247	1.089175
CONST	.0724674	.5008979	0.14	0.885	-.9092745	1.054209

Random-effects GLS regression- Robust
Number of observations: 38
R-sq: Within = 0.7207

Fifthly, the breadth outreach measures coverage of the MFIs such as the number of borrowers over a period of time. Table 4.5, depicts that Log of Gross Loans (LGL), Log of Asset (LA), Debt to Equity Ratio (DER) and Log of Operating Expenses (LOE) all have positive coefficients in the breadth of outreach, an increase in LGL increases breadth of outreach by 0.6598294. Gross loan increase indicates wider coverage of loans to the active borrowers. Similarly, for MFIs to attain breadth of outreach assets need to be increased such as number of offices (branches), motor vehicles as well as current assets. It is obvious that for MFIs to attain optimal outreach operating expenses will increase. For instance, interest on savings and fixed deposit rates to be set little bit high to encourage more savings. The LGL, LA and LOE are significant to the model, while DER is insignificant.

Capital to Asset Ratio (CAR) is insignificant and have negative coefficient. The Log of Cost per Borrower (LCPB) is significant to the dependent variable; an increase in LCPB will lead to decrease of breadth of outreach by 1.005292. MFIs should reduce cost per borrower as much as possible because the increase impact negatively on the outreach performance. The R-sq. within is 0.7207.

Table 4.6: Depth outreach regression-Dependent variable: Log of average loan adjusted per capita GNI

LALA	Co-eff.	Std. Err.	T	P>|t|	[95%Conf.Interval]	
CAR	285.3046	153.7745	1.86	0.073	-28.74479	599.354
DER	8.813945	9.744021	0.90	0.373	-11.086	28.71389
LL	20.02949	13.52123	1.48	0.149	-7.584544	47.64351
LA	-2.670041	14.71661	-0.18	0.857	-32.72538	27.38529
PAR30	758.6513	340.9444	2.23	0.034	62.34998	1454.953
CONST	-535.4678	192.9909	-2.77	0.009	-929.6079	-141.3278

Fixed-effects (within) regression- Robust
Number of observations: 48
R-sq: Overall = 0.1005

Lastly, the depth outreach indicator measures the ability of MFIs size of loan to the low income household and how it impacts on the standard living of the poor. Table 4.6, provides a descriptive statistics that Portfolio at Risk past due 30 days (PAR30) is significant with positive coefficients. This means that increase in PAR30 will greatly increase the depth of outreach in this model by 758.6513.

While the Capital to Asset Ratio (CAR), Log of Gross Loans (LGL) and Debt to Equity Ratio (DER) is insignificant with positive coefficients. The Log of Asset (LA) is also insignificant. R-sq. within is 0.1005.

Chapter 5

CONCLUSION

The study's objective is to analyze the performance of sample MFIs in Nigeria. We conclude that the MFIs evaluate their performance using some of the financial ratios in the CAMELS and in addition the OSS and FSS. This because of the target market of MFIs which include outreach as social performance and also the bench mark of the MFIs is not the same with the conventional banks.

Summarily, the findings of this study reveal that the MFIs will cover their cost without necessary increasing number of loan officer and number of female borrowers'. Consequently, the more the number of borrowers increases the better for MFIs to increase their OSS. The result shows that PAR 30 will be properly checked and maintain with the increase of log of loan officer per borrower.

The return on equity in our estimates shows significant when the MFIs ensures decrease in portfolio at risk past due 30 days. Cost efficiency is significant when other variables are constant. The result depicts that the sample MFIs attain breadth of outreach at the same time reduces the cost per borrower and lastly, for the MFIs to increase the depth of outreach PAR30 will also increase.

5.1 Suggestions to MFIs and Government

MFI s should be very careful with the borrowers per loan officer as too much borrower to a loan officer will not argue well with the institution as shown in table 4.1 it reduce sustainability and in table 4.2 it increase delinquency. Both deplete the income thus, impact negatively on the overall financial profitability.

For MFIs to generate profit, they need to maintain low PAR30 at all the time. This can be done by recruiting competent loan officers to educate the client and also select good ones.

MFIs should fix attractive interest rate for time deposit and savings deposit. Although operating expenses will rise but the outreach performance is going to be achieved.

Government need to ensure adequate provision of infrastructures like electricity which is basically required by the MFIs to carry out its operation, based on the findings that outreach increases together with financing cost for MFIs in Nigeria.

The government should implement the stakeholder role stated in the microfinance policy supervisory and regulatory framework by setting aside an amount not less than 1% of the annual budgets of state governments for on-lending activities of microfinance banks in favour of their residents. These will go a long way in increasing the CAR and depth outreach of MFIs.

REFERENCES

Agarwal, P.K and Sinha, S.K (2010). The financial performance of microfinance institutions in India. Delhi Business Review X Vol. 11, No. 2 (July – December 2010)

Armendariz B, Morduch J. 2010. The Economics of Microfinance, 2nd edition. MIT Press: Cambridge, MA.

Anyanwu, C.M. (2004). "Microfinance Institution in Nigeria". Paper presented at the G24 Workshop on Constraints to Growth in Sub-Sahara Africa, Pretoria, South Africa. Nov. 29-30.

Ayayi, A.G. and Sene, M. (2010), "What drives microfinance institution's financial sustainability", The Journal of Developing Areas, Vol. 44 No. 1, pp. 303-324.

Bamisile, A.S. (2006). "Developing a long term sustainable micro finance sector in Nigeria: the way forward," proper presented at the Small Enterprises Educational and Promotion Network (SEEP) Annual General Meeting, Washington DC, October 23-27.

Carcia, C and Olivie, I. (2003): Outreach versus financial performance microfinance programs: theoretical notes and examples. Journal of International Economics, 9, 129-152.

Central Bank of Nigeria (CBN, 2002):"Statistical Bulletin".Vol.3, No.1. June.

Central Bank of Nigeria (CBN, 2005). Microfinance policy, regulatory and supervisory framework for Nigeria. Retrieved from (www.cbn.gov.org.)

Central Bank of Nigeria (CBN, 2011). Revised Microfinance policy, regulatory and supervisory framework for Nigeria. Retrieved from (www.cbn.gov.org.)

Christen R.P., R. Rosenberg, and V. Jayadeva. 2004. Financial Institutions with a 'Double Bottom Line': Implications for the future of microfinance. Occasional Paper No.8. Washington, DC: CGAP.

Crombrugghe, A., Tenikue, M and Sureda, J. (2007) Performance Analysis for a Sample of Microfinance Institutions in India" Annals of Public and Cooperative Economics 79:2 2008 pp. 269–299

Dichter, T.W., 1999. "NGOs in microfinance: Past, present and future." In Microfinance in Africa, Breth, S. A. (Ed.) Mexico City Sasakawa Africa Association, pp: 12-37.

Hansen, L.P. 1982. Large sample properties of generalized method of moment's estimators. Econometrics 50: 1029–54.

Hamada, M. (2010), "Financial services to the poor: an introduction to the special issue on microfinance", The Developing Economies, Vol. 38 No. 1, pp. 1-14.

Hartarska, V. 2005. Governance and performance of microfinance institutions in central and eastern Europe and the newly independent states. World Development 33: 1627–48.

Helms, B. 2006. Access for all. Washington, DC: CGAP.

Luzzi FG, Weber S. 2006. Measuring the performance of microfinance institutions. Applied Sciences, pp. 1–17.

Ledgerwood, Y. (2000). Micro credit initiatives for equitable and sustainable development: who pays? World Development, 27 (1).

Ledgerwood, J. 1999, Microfinance Handbook: an Institutional and Financial Perspective, Washington DC: World Bank.

Microfinance Information Exchange (MIX), web source (www.mixmarket.org).

Morduch, J. and Armendaritz de Aghion, B. 2005. The economics of microfinance. London: MIT Press.

Navajas, S., M. Schreiner, R. Meyer, C. Gonzalez-Vega, and J. Rodriguez-Meza. 2000. Microcredit and the poorest of the poor: Theory and evidence from Bolivia. World Development 28: 333–46.

Olawepo, M. (2002). Microfinance institutions in Nigeria: policy, practice and potentials. In proceedings of the G24 Workshop on Constraints to Growth in Sub Saharan Africa, Pretoria, South Africa, November 29-30, 2002.

Otero, M., & Rhyne, R. (1994). Bringing back development in microfinance. Journal of Microfinance,

Robinson, M. (1995). Introducing savings mobilization in microfinance programs: when and how? Philippines: Microfinance Network Cavite.

SEEP. 2010. Pocket guide to microfinance financial reporting standards measuring financial performance.

Schreiner, M. 2002. Aspects of outreach: A framework for discussion of the social benefits of microfinance. Journal of International Development 14: 591-603.

Soludo, Chukwuma C. (2008) "Framework For Public Private Partnership In Micro financing In Nigeria. Being A Keynote Address By The Governor Of The Central Bank Of Nigeria At The International Microfinance Conference And Annual Microfinance/Entrepreneurship Awards, Abuja, Nigeria, January 17 -18, 2008

Tucker M, Miles G. 2004. Financial performance of microfinance institutions: A comparison to performance of regional commercial banks by geographic regions. Journal of Microfinance/ESR Review 6(1): 41–54.

Woolcock, MJV. 1999. Learning from failures in microfinance: What unsuccessful cases tell us how group based programs work. American Journal of Economics and Sociology 58(1): 17–42.performance of microfinance institutions. SEEP Network.

Von Pischke, J. D. (1996) Measuring the Trade-off between Outreach and Sustainability of Microenterprise Lenders, Journal of International Development 8(2): pp. 225-239

World Bank (2007 Finance for All: Policies and Pitfalls in Expanding Access. A World Bank Policy Research Report, the World Bank: Washington

Yaron, Jacob (1992). Successful Rural Finance Institutions, Discussion Paper (150), Washington, D.C., World Bank

Yaron, J. (1999). "What makes rural finance institutions successful?" The World Bank Research Observer 9(1): 49-70.

APPENDICES

Appendix A: Names of MFIs

SERIAL NO.	MFI NAME	NUMBER OF OFFICES
1.	ACCESS BANK MFB	8
2.	AJUTA MFB	1
3.	ALLIANCE MFB	6
4.	AMFB	16
5.	APEX MFB	1
6.	AWE MFB	1
7.	AZSA MFB	5
8.	BABURA MFB	1
9.	BALOGUN MFB	1
10.	CHIKUM MFB	2
11.	COWAN MFB	
12.	CREST MFB	3
13.	ERE CITY MFB	3
14.	EXCEL MFB	4
15.	FG MFB	8
16.	FORTIS MFB	14
17.	GBOKO MFB	1
18.	GOBARAU MFB	1
19.	GREENLAND MFB	1
20.	HASAL MFB	12
21.	HERITAGE MFB	1
22.	IBA MFB	1
23.	IBU-AJE MFB	3
24.	IC MFB	5
25.	IKIRE MFB	1
26.	IKOYI -ILE MFB	1
27.	ILOBU COMMUNITY MFB	1
28.	ILLOFFA MFB	
29.	ILORA MFB	1
30.	ILORIN MFB	1
31.	IMFB	49
32.	IPAPO MFB	1
33.	IPERU MFB	1

34.	KARIS MFB	
35.	KEFFI MFB	1
36.	KERNEL MFB	1
37.	LAPO NGR MFB	302
38.	LEADCITY MFB	3
39.	MBA MFB	1
40.	MBAITOLI MFB	1
41.	MOYOFADE MFB	5
42.	MULTIVEST MFB	1
43.	NASARAWA MFB	1
44.	NORTH CAPITAL MFB	
45.	OAKLAND MFB	1
46	OBAFEMI AWOLOWO UNIVERSITY MFB	1
47.	OBOKUN MFB	1
48.	OGIYAN MFB	8
49.	OKIGWE INDUSTRIAL MFB	2
50.	OKUKU MFB	1
51.	OLOFIN MFB	4
52.	OLOGBON MFB	1
53.	OLOMI MFB	
54.	OLUBASIRI MFB	1
55.	OMAK MFB	8
56.	ONIBU- ORE MFB	1
57.	OROKE MFB	3
58.	OSCOTECH MFB	2
59.	OSOGBO MFB	1
60.	OSPOLY MFB	1
61.	PACESETTER MFB	3
62.	PATHFINDER MFB	1
63.	TRUSTFUND MFB	3
64.	ZION MFB	1

Appendix B: Unit Test Results

Fisher-type unit-root test for lnfs
Based on Phillips-Perron tests

Ho: All panels contain unit roots — Number of panels = 57
Ha: At least one panel is stationary — Avg. number of periods = 2.68

AR parameter: Panel-specific — Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Newey-West lags: 1 lag

		Statistic	p-value
Inverse chi-squared(80)	P	73.4955	0.6829
Inverse normal	Z	-3.9657	0.0000
Inverse logit t(19)	L*	-11.1202	0.0000
Modified inv. chi-squared	Pm	-0.5142	0.6965

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for lnb
Based on Phillips-Perron tests

Ho: All panels contain unit roots — Number of panels = 60
Ha: At least one panel is stationary — Avg. number of periods = 2.68

AR parameter: Panel-specific — Asymptotics: T -> Infinity
Panel means: Included
Time trend: Not included
Newey-West lags: 1 lag

		Statistic	p-value
Inverse chi-squared(78)	P	88.1977	0.2015
Inverse normal	Z	-6.9666	0.0000
Inverse logit t(24)	L*	-11.9924	0.0000
Modified inv. chi-squared	Pm	0.8165	0.2071

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.

Fisher-type unit-root test for lfc
Based on Phillips-Perron tests

Ho: All panels contain unit roots
Ha: At least one panel is stationary

Number of panels = 26
Avg. number of periods = 2.31

AR parameter: Panel-specific
Panel means: Included
Time trend: Not included
Newey-West lags: 1 lag

Asymptotics: T -> Infinity

		Statistic	p-value
Inverse chi-squared(10)	P	15.2408	0.1235
Inverse normal	Z	-2.1096	0.0174
Inverse logit t(19)	L*	-2.2753	0.0173
Modified inv. chi-squared	Pm	1.1719	0.1206

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.