

DETERMINANTS OF LOANS AND ADVANCES IN MICRO-FINANCE SUB-SECTOR: AN EMPIRICAL EVIDENCE FROM MICRO-FINANCE BANKS IN NORTHERN NIGERIA

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Abstract

The study essentially investigated the major determinants of loans and advances in the Micro-Finance sub-sector of the Nigerian financial system. Specifically, capital base, liquidity ratio, deposit base and lending rate were examined. The study obtained data from 60 Microfinance banks in Kaduna and Kano states over a period of five (5) years from 2007 to 2011. The main theory that was used in the study is the theory of human capital. The agency and bank capital theories were also used as complimentary theories. The secondary data were analyzed to confirm the appropriate relationships between the dependent variable (Micro Finance Banks' Loans and advances) and the independent variables (determinants). Regression analysis was carried out to determine the relationships between the dependent and independent variables. The result revealed that there is a positive relationship between loans and advances (dependent variable) and the bank capital. Similar result was also recorded for the deposit base of the bank. The result also confirms inverse relationships with the liquidity position and lending rate. Tests carried out include regression and chi-square analysis. The study therefore, recommended that enhanced capital base policy of the Central Bank of Nigeria is indeed a positive development as this will boost the growth of the sub-sector. However, the lending rate should be further regulated to encourage borrowers and to stimulate economic activities and growth.

Keywords: *Microfinance, Loans and Advances, Capital Base, Liquidity Ratio, Deposit Base.*

Introduction

As a nation progresses through various stages of economic growth and development, expectations regarding the role of financial institutions in economic development and social mobilization assume greater and weightier dimensions. Micro-finance Banks like the conventional commercial banks perform the primary role of intermediating funds between the surplus and deficit economic units. In this process, they do carry out a range of financial services including loans/advances and savings to the low-income client (Legerwood, 1999). The importance of Micro finance institutions in a nation's economic development efforts cannot be over-emphasized. As a major objective, micro-finance institutions exist to serve the financial needs of under-served or un-served markets. Khandker (2003) points to the fact that this

will assist in meeting such development goals like employment generation, poverty reduction, growth of existing businesses and women empowerment. Some studies have been carried out on the success of micro-finance institutions in relation to savings mobilization and poverty reduction (Legerwood, 1999; Oladeji, 2001; Robinson, 2001; Schreiner, 2002; Ukeje, 2005; wooller and Schreiner, 2006). However, the extent to which micro-finance institutions can positively impact on the poor through loaning services will depend on the level of efficiency in credit Administration. Several studies conducted on micro finance institutions are largely on poverty reduction in developing countries, studies on the determinants of Loans and Advances in the microfinance sub-sector are very few. This is even more so in Northern

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Nigeria where there are almost no research effort carried out on the determinants of Loans and Advances in microfinance sub-sector.

Most studies earlier carried out centered on impact analysis of microfinance institutions on poverty eradication and outreach. For instance, Osotimehin and Jegede (2011) beamed their search light on microfinance outreach in South Western Nigeria. Anyawu (2004) focused on evaluation of outreach criteria of NGO's microfinance institutions. Even Central Bank of Nigeria's study (2000) was mainly on the operational modalities of microfinance institutions in Nigeria. Some other studies concentrated on poverty alleviation (Akanji, 2001; Folake, 2005; Magnus, 2005). Morduch (2005) points out that a micro finance institution can achieve a stable healthy position and growth by granting credit facilities on a sustainable basis to the underserved poor. Indeed high sustainability is synonymous with high outreach through loans and advances (Yaron, 1999).

According to Yaron (1999), outreach means the degree to which a microfinance institution provide loans and advances and other financial services to large number of clients. Schreiner (2002) also points out that success of a microfinance institution is measured by the extent to which it has served those who otherwise would not have access to formal financial assistance. The general consensus from literature indicates that microfinance institutions owned by the state (Government) and NGOs performed well in the volume and quality of loans granted to the poor (Morduch, 2000). Rhyne, 2002 submits that private sector owned microfinance institutions under-performed in this regards. Evidences from studies indicate that what determines the capacity to grant loans and advances in microfinance institutions has not been exhaustively covered. The continued disappointing performance of micro finance institutions outreach in terms of Loans and advances calls for investigation.

Definition of key terms

Microfinance is much more inclusive term than micro-credit. It includes a wide variety of financial services offered by micro-finance institutions. Such financial services include amongst others credit, savings, money transfer and insurance. Ledgerwood (1999) points out that the low income clients served by micro-finance are traders, street vendors, small service providers (hairdressers, drivers, artisans) and other small producers. Microfinance Institutions' are those institutions that grant micro-credit particularly to the productive poor. They also provide savings and other services to them in both urban and rural settings. Here in Nigeria, the micro-finance institutions are categorized into: formal and informal institutions) IFAD/World Bank/CBN 2001). An example of formal institution is micro-finance banks. Informal micro-finance sector comprised mainly of the self-help groups (SHG), such as savings and credit associations locally referred to as "Isusu", "Esusu" or "Asusu".

Robinson (2001) identifies micro finance as a term applicable to small-scale financial services-primary credit granted to farmers, herdsmen and those who operate small enterprises or micro-enterprises. On his part, Akanji (2001) posited that microfinance is the provision of very small loans to the poor such that they can be positively engaged in productive activities in new ventures or expansion of existing businesses. He also states that micro finance recognizes the peculiar problems often faced by micro-enterprise owners in their inability to provide stringent collateral requirements for loans –micro finance, therefore, promotes a suitable collateral substitution. Loan repayments are carefully structured to suit cash flow patterns of small businesses.

The Central Bank of Nigeria (2011) states that micro-finance policy objectives in Nigeria include among others:

- i. The provision of timely,

- diversified, affordable and dependable financial services to the economically active poor,
- ii. Mobilization of savings for intermediation and rural transformation;
- iii. Promotion of synergy and mainstreaming of the informal microfinance sub-sector into the formal system;
- iv. Provisions of dependable avenues for the administration of the microcredit programmes of government and high net worth individuals on a non-recourse basis.

The Central bank of Nigeria (2011) 'Micro finance policy framework for Nigeria' requires micro finance banks to be "adequately capitalized, technically sound, and oriented towards lending based on cash flow and the character of the clients".

Nwankwo (1991) defined capital adequacy "as the amount of capital that can effectively discharge the primary capital function of preventing bank failure by absorbing losses". These losses are related to the risks which microfinance banks undertake as a natural corollary of their efforts to serve the legitimate credit needs of their clients. Adequate capital is seen as providing the ultimate protection against insolvency and liquidation arising from the risks inherent in the banking business. The statutory requirements concerning minimum capital requirements, capital/deposit and capital/loan ratios affect capital adequacy. Benson (1972), argued that a related large number of banks that failed were severely undercapitalized. The provision of financial support through credit and savings for the acquisition of capital goods is crucial for effective economic management. Micro finance banks facilitate the stimulation of savings and asset accumulation. Schreiner (2002), that learning to save and having a safe

place to keep those savings are principal benefits of the micro finance institutions.

Loans and advances

Loans and advances are borrowed funds with specified terms for repayment. When there are insufficient accumulated savings to finance a business and when the return on borrowed funds exceeds the interest rate charged on the loan, it makes sense to borrow rather than postpone the business activity until sufficient savings can be accumulated, assuming the capacity to service the debt exists (Waterfield and Duval 1996). Loans are generally made for productive purposes that is, to generate revenue within a business. Some MFIs also make loans for consumption, housing, or special occasions. While many MFBs insist that only productive loans be made, any loan that increases the liquidity of the household frees up enterprise revenue, which can be put back into the business. Most MFBs strive to reach sustainability by ensuring that services offered meet the demands of clients, that operations are as efficient as possible and costs are minimized, that interest rates and fees are sufficient to cover costs, and that clients are motivated to repay loans. MFIs can be sustainable provided they have enough funds to continue operating in the long term.

Capital base

Minimum 'capital base' are set for all organizations entering the financial sector. This means that financial organizations wanting to formalize must have a minimum amount of capital to support their activities (stated as a currency amount rather than as a percentage of assets). "Capital refers to the amount of equity an institution holds". It can also include some subordinated debt, depending on the specific rules of the regulatory board (Magnus 2005). Since MFBs rely primarily on donor capital contributions, they may not have sufficient capital to meet

these rules, which can limit the formalization of microfinance organizations. While regulators should be encouraged to set minimum capital standards in accordance with their objectives of encouraging competition and low-risk behavior, it is important for them to recognize that MFB owners may consider social objectives over profit maximization goals and that minimum capital requirements may not be as powerful an inducement to sound governance as would generally be the case with standard commercial banking institutions. (Folake 2005).

Ledgerwood (2000) define capital adequacy as the capital in an organization that is available to cover its risk. Conventional capital adequacy concepts assume that it is clear what constitutes equity and debt. All micro-finance banks are required to have a minimum amount of capital relative to the value of their assets (Robinson 1994).

This means that in the event of loss of assets, the micro-finance bank would have sufficient funds of its own (rather than borrowed from depositors) to cover the loss (Gray, Tom, and Matt, 1994). Capital adequacy standards refer to the percentage of assets that is funded by debts. Stated differently, capital adequacy standard is the maximum level of debt versus equity (degree of leverage) that a financial institution can have. Since assets are funded either by debt or equity, capital adequacy standards limit the proportion of assets that can be funded with debt (Ledgerwood 2000).

Rosenbery (2012) observed that current international standards outlined in the Basle Accord provide a maximum leverage ratio of 12 to 1 or, stated differently, minimum capital of 8 percent of risk-weighted assets. Assets are risk weighted between 0 and 100 percent. For example, an unsecured loan to an unknown SME is of high risk and would therefore likely be risk-weighted at 100 percent. A fully secured loan to a well

established small or medium enterprise would be risk-weighted at a much lower rate (Dichter 1997). Once an institutions asset (including off-balance sheet items) is risk-weighted, the total amount of capital required can be determined. Cuevas (1996) noted that the lower the risk, the lower the risk-weighting, the lower the total assets, and therefore, the lower the amount of required capital. Because capital is generally a more expensive source of funds than debt, Micro-finance banks want to have lower capital requirements and consequently try to have lower risk assets. The result is beneficial for both the banks and the regulators because banks are discouraged from high-risk lending (Christen 1995).

Most MFBs are not fully leveraged due to their inability to borrow funds on the basis of their performance and debt capacity. The greater part of the typical MFB's assets is funded with donor contributions that are generally considered capital. Thus almost all MFBs easily meet capital adequacy standards. For example, BancoSol, one of the most leveraged MFBs as of year-end 2011, had risk weighted capital adequacy of 17 percent, much higher than is required under the Basle Accord (Ledgerwood 2012). There are strong arguments against allowing MFBs to leverage their equity capital (borrow a greater proportion of funds) as aggressively as commercial banks. As most countries are relatively inexperienced with microfinance (there is little empirical data about MFB performance), regulators may wish to be cautious in fixing leverage ratios. It is suggested that an initial capital-asset ratio be no lower than about 20 percent for MFIs, subject to downward adjustment as the institution and the industry gain experience (Rhyne 1995).

Liquidity ratio

Churchill (1997) refers to 'liquidity' as the amount of available cash (or near-cash)

relative to the MFI's demand for cash. MFBs are exposed to high levels liquidity risk: seasonal factors influence many of their SME customers. MFI's tend to depend on donors, whose funding can be unpredictable; and their nondonor liabilities tend to be short term. If the organization is operating a stable financial market, it may be able to deal with liquidity risk through short-term borrowings (Christen, 1995). However, depending on the stability of the market, regulators may find it prudent to set relative high liquidity standards for MFBs, taking into account the added costs that this implies.

Deposit base

'Deposit' mobilization has long been a controversial issue in microfinance. In recent years there has been increasing awareness among policy makers and practitioners that there is a vast number of informal savings schemes and MFBs around the world (in particular, credit union organizations) have been very successful in mobilizing deposits. These developments attest to the fact that low-income clients can and do save. The World Bank's "Worldwide Inventory of microfinance Institutions" found that many of the largest, most sustainable institutions in microfinance rely heavily on savings mobilization. "In 1995, over \$19 billion are held in the surveyed microfinance institutions in more than 45 million savings accounts compared to nearly \$7 billion in 15 million active loan accounts (Ledgewood, 2012). Often neglected in microfinance, deposits provide a highly valued service to the world's poor who seldom have reliable places to store their money or the possibility to earn a return on savings" (Paxton 1996). The survey also found that the ability to effectively mobilize deposits depends greatly on the macroeconomic and legal environment. "Statistical analysis of the surveyed institutions reveals a positive correlation between the amount of deposits mobilized and the average growth in per capita GNP of

the country. Likewise, higher deposit ratios are negatively correlated with high levels of inflation. Finally, the amounts of deposits are positively correlated with high levels of population density" (Ledgewood, 2012).

Objectives of the study

The main objective of the study is to examine the determinants of loans and advances in micro finance-subsector in Northern Nigeria. In order to fulfill the research aim, the study tried to:

- i. Determine whether capital and deposit base influence a microfinance bank's ability to grant loans,
- ii. Investigate whether liquidity position and lending rate impact on the level of loans and advances.

Research Questions

Two (2) research questions are formulated and presented for answering by means of ordinary least square method to ascertain the determinants of loans and advances in microfinance sub-sector.

1. Do the capital and deposit base influence micro finance bank's ability to grant loans?
2. What is the influence of liquidity position and lending rate on the level of loans and advances granted by microfinance banks?

Theoretical framework

One of the most important ideas in bank lending economics is the set of credit analysis skills of bankers as a form of capital in which bankers make a variety of lending decisions. This perspective is important in understanding both investment incentives in terms of loans and advances, and the mechanics of liquidity management. The basic theory of human capital is thus, vital to the analysis in this study. The agency and bank

capital theories are also used as complementary theories.

- i. The agency theory is basically concerned with the manner in which agency affect the form of the contract, especially where the contracting parties are asymmetrically informed. Asymmetric information means circumstances where one party to a transaction is more equipped with information than the other party. Arrow 1968, Akerlof 1970; Hillier and Ibrahim 1993, point to the fact that such situations could cause markets to deviate from the conventional behavior patterns which can lead to moral problems and adverse selection.
- ii. The bank capital channel theory views a change in interest rate as affecting lending. This is more so, when banks' lending is constrained by capital adequacy requirement (Osotimehim, Jegede and Akinlabi 2011). It follows therefore, that an increase in interest rates will raise the cost of banks' external funding but reduce banks' profit and capital. The tendency is for the bank to reduce their supply of loans if the capital constraint becomes binding. It is a common knowledge that banks are subjected to both the market and the regulatory body who normally impose capital requirements. For example, micro-finance banks are required to maintain at least 40 percent liquidity ratio of total deposits. Thus, the ability of micro finance banks to grant loans is constrained by the amount of financial resources at their disposal

based on the minimum capital requirements.

- iii. The human capital theory views the skills, knowledge and competencies of people as source of wealth generation for organizations. However, despite increasing evidence to show that Human Capital Management (HCM) can and does improve business performance, micro-finance banks and some other companies appear to be slow in putting it into practice (Ledgerwood, 2012). There is a need for:
 - a. Further training and development of operators of microfinance institutions with the aim of seeing people as a balance sheet rather than costs, and
 - b. Devising relevant measure and human capital is somewhat intangible and more difficult to measure than financial key performance indicators (Reeves 2004).This study shall apply each of these theories in gaining an insight into the determinants of loans and advances in microfinance institutions.

Materials and methodology

This study made use of both descriptive and econometric analysis. The econometric analysis is the least square method this was specified to examine the determinants of loans and advances in microfinance banks. The study adopted purposive and stratified sampling techniques. The microfinance banks operating in Kaduna and Kano states comprised the study population. The total population of the study is 60 micro-finance institutions made up of 27 in Kaduna state and 33 in Kano state.

Given the nature of microfinance institution, rose and Frazer (1988) argue that the size of loans and advances is dependent on

the capital structure, liquidity levels, deposit base and the lending rate. Therefore, the following linear equation was formulated as:

$$\text{LogLA} = b_0 + b_1\text{LogK} - b_2\text{LogLq} + b_3\text{LogDb} - b_4\text{LogLr} + \mu$$

Where: b_0, b_1, \dots, b_4 are constants

LA = Loans and Advances (dependent variable)

K = Capital base

Lq = Liquidity position

Db = Deposit base

Lr = lending rate

Amount of Loans and advances offered by banks can be influenced by a number of factors. Capital base, liquidity base, deposit base and lending rates which are the major ones. The relation of loans and advances with capital base is direct therefore in the model the variable K (capital) is positive. However, a reverse relationship exists on liquidity base and lending rate hence, both have negative. Similarly, Db variable is positive as it changes the amount of loans and advances of a bank.

Source of data

Both the primary and secondary sources of data were used in this research study. Panel data were collected from the selected micro finance banks in Kaduna and Kano state for a period of five (5) years from 2007 to 2011. Annual micro-finance level data was extracted from the loans/advances savings/deposit registers as well as the balance sheet of the micro finance banks. By studying the repeated cross section of observations, panel data are well suited to study the dynamics of change.

A survey was conducted to examine the public views of the various determinants of loans and advances by Microfinance Banks. A cross sectional design was used in the study to measure the determinants of loans and advances based on a Ten (10) variable responses. The sample for this aspect of the

study was made up of 200 respondents (70% individual customers and 30% corporate customers). These were selected through simple random sampling method from customers in Kano and Kaduna states. Some of the customers were skeptical about the uses of their submissions. Their fears were allayed as assurances were provided that the essence of the study was mainly for academic purposes. The questionnaires were administered to the economically active customers (both young and old). The data collected was processed and analyzed with the aid of Statistical Package for the Social Sciences (SPSS). The first part of the analysis was carried out using socio-demographic characteristics of the respondents.

Results

The socio-demographic characteristics consist of age, sex, educational levels, professional calling, and the marital status of respondents. The study indicated that most of the respondents are within the ages of 31-40 years. However 56.7% were male while only 8.1% represented the female gender. The study further revealed that of the relatively younger youths (21 to 30 years) 18% were male while 8% were female of the 200 questionnaires that were administered, 185 responses was recorded.

Table 1: Distribution of participants by background information (age and sex)

Age (years)	Male	Female	Total
21-25	10	05	15
26-30	25	10	35
31-35	55	05	60
35-40	50	10	60
40 and above	15	0	15
Total	155	30	185

Table 2: Distribution of respondents by educational level

Educational level	Male	Female	Total
O' Level	48	5	53
ND/NCE	42	10	52
HND/Degree	55	15	70
Post Graduate Degree	10	0	10
Total	155	35	185

Discussion

The result in Table 4 Confirms that using the following tests: correlation coefficients and Durbin-Watson statistic at 5 percent level of significance, the 't' statistical test for all the parameters indicate that the t-cal is significant. The values obtained of 1.992, -1.325, 0.784, and 2.302 confirm this. This by implication shows that the parameters estimated are statistically significant in the model determination and therefore, they are significant explanatory variables in the model's determination for line of best fit.

Additionally, results confirm the inverse relationship existing between loans and advances on one hand and liquidity position and the lending rate on the other hand. This goes to show that as either of these two variables increases, the volume of loans and advances will diminish. Similarly, when the liquidity ratio and/or lending rate decreases, the level of loans and advances will increase. The results of chi-square tests (in the attached appendix) also points to the same fact. However, it is important to note that the Bank's Deposit base and capital adequacy's parameters also confirm a positive relationships between these variables and loans and advances. In other words, an increase in capital or Deposit of a micro finance bank will enhance the bank's ability to grant more loans to its customers. Chi-square tests also confirm this position (see attached Appendix)

The following can be inferred from the test carried out:

1. That there is a relationship between dependent variable (i.e. Loans and advances) and independent variables (i.e. capital adequate, Liquidity position, Deposit base and lending rate;
2. That as the bank's capital and/or deposit increases, the total loans and advances equally increase;
3. That there is an inverse relationship between liquidity ratio and lending rate on the one hand and loans and advances on the other.

The Durbin Waston test which shows 2.48 values is close to 2 and 0.48 can be ignored. This is an indication that there may have been an omission of one or more independent variables that can affect the level of loans and advances. These may include relationships with correspondent banks, inflationary rates and other macro economic factors that may have significant effect on the level of loans and advances.

Conclusion

The role of microfinance institutions as catalysts for economic growth and development through granting of loans and advances has been recognized in studies and economic literature. The importance of micro finance institutions in a nation's economic development efforts cannot be over-emphasized. As a major objective, microfinance institutions exist to serve the financial needs of the under-served and unserved markets (ledgerwood, 1999). Studies have been carried out on the successes of microfinance institution in relation to financial intervention on poverty alleviation and even in the area of housing development (Chikezie, 2012).

Using regression and chi-square analysis, this study establishes that there has

been an increase in the trends of advances granted by microfinance banks. The findings also revealed that loans and advances is driven by levels of capital adequacy, deposit base, liquidity position and the lending rate in varying degrees. To this end the study recommends measures that will enhance service delivery in the microfinance sub-sector.

Recommendations

The study recommends the following:

1. The regulatory authority (that is, the Central Bank of Nigeria) should adjust the liquidity and rediscounting rate such that will favour improved lending capacity for the micro-finance banks.
2. The micro-finance banks should strength their level of governance structure so as to achieve sustainability.
3. Appropriate policies and legal regimes (such as Bankers' bank for micro finance banks) be put in place to reduce cost of lending.
4. Priority attention be given to infrastructural development (such as energy) by Government in order to reduce cost of doing business by micro-finance banks.
5. Microfinance banks should be encouraged to source more medium-term deposit so that they can lend on a relatively longer period to prospective borrowers.
6. The new capital requirement of N20m (unit microfinance banks), N100m (state micro finance bank) and N2b (National Microfinance bank) is a step in the right direction. But microfinance banks should be encouraged to attract more than just minimum capital requirement.

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APPENDIX 'A'

Table A: Chi-Square Table for Capital and Deposit Base

O	E	O-E	$\frac{(O-E)^2}{E}$
40	45.0	-5	0.6
44	44.2	-0.2	0.0009
49	46.6	2.4	0.1
13	10.3	2.7	0.7
17	12.0	5	2.1
12	11.8	0.2	0.003
10	12.4	-2.4	0.5
0	2.7	-2.7	2.7
			6.7

$$X_c^2 = 6.7 > X_E^2 = 6.25139$$

Appendix 'B'

Table B: Chi-Square Table for Lending Rate and Liquidity Ratio

O	E	O-E	$\frac{(O-E)^2}{E}$
30	34.6	-4.6	0.6
50	47.6	2.4	0.1
65	60.5	4.5	0.3
15	17.3	-2.3	0.3
10	5.4	4.6	3.9
5	7.4	-2.4	0.8
5	9.5	-4.5	2.1
5	2.7	2.3	2.0
			10.1

DF = 3

X = 10%

$$X_c^2 = 10.1 > X_E^2 = 6.25139$$