ICT Practice and Performance of Microfinance Institutions in Nigeria

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Abstract: *Notwithstanding of the importance and applicability of Information and Communication Technology (ICT) adoption practice in microfinance institutions (MFIs), the literature indicates very few studies have attempted to investigate the influence of ICT adoption practice on the performance of MFIs, specifically the relationship between ICT adoption practice and performance of MFIs. The literature reveals that there is not only limited information on the ICT adoption practice of MFIs but also little research in this important area. By using structural questionnaires, the data for the study were collected from 121 MFIs in Nigeria. The data for the study was analysed using both Statistical Package for Social Science (SPSS) and Partial Least Squares Structural Equation Modeling (PLS-SEM) which involve the assessment of measurement as well as the structural models. The findings of the study indicate significant positive relationship between ICT adoption practice and performance of MFIs. The studydemonstrated that the ICT adoption practice would not only able to improves the financial performance but also social performance of MFIs as well.The results of the study also show that owner and managers of MFIs also need to be aware of the need to continuously develop their ICT capabilities in order to become more competitive in the financial industry. The findings imply that better ICT may have higher impact on the performance of the MFIs.*
Keywords: *ICT, MFIs, Performance, Nigeria.*

I.   Introduction

Microfinance institutions (MFIs) were formed to content the financial needs of the poor as well as those that do not have access to conventional banking services. These financial institutions provide various types of microfinance and financial services that are expected for the needy. Interestingly, in developing and developed nations, MFIs have become not only an vital player in the financial industry but also a main source of financing for people with minimal income as well as those that do not have access to financial facilities provided by commercial banks and other conventional financial institutions.

More importantly, in developing countries such as Bangladesh and Nigeria, the facilities and others financial services provided by MFIs are more and more being recognized as one of the effective tools of eradicating poverty. For instance, it was reported that in Bangladesh, the Grameen Microcredit Bank which was founded in 1983 helped to get clear of begging by allocating funds to assisted the poor to start their own small businesses, provide food and other basic items to beggars, enhanced education of poor teenagers through education loans, and increased the number of homes equipped with electricity(Geleta, 2016; Ene & Inemesit, 2015; Tadele & Rao, 2014; Shukran & Rahaman, 2011; Yunus, 1998 and 2007).

As financial institutions to the poor, their success depends very much on their ICT adoption practices and how well they are being managed. The successful MFIs are able to perform and sustain their financial viability because of their ability to adopt ICT practices. ICT adoption practices are considered not only important to MFIs but also major tool for their organizational performance. As the microfinance industry grows, ICT is being endorsed as an important tool to facilitate it expansion and reach.

Despite the importance of ICT adoption practices to organizations such as MFIs, these practices have not attracted much research and interest. In particular, research on ICT adoption practices in MFIs from the Nigerian perspective has been neglected. The review of the past studies indicates previous research primarily concentrated on examining ICT practices as adopted in other types of organizations as well as in other developed and developing countries.

Based on this information and research gaps, the paper is presented in five sections. The following Section Two is literature review. Next, Section Three is research methodology, section four present the results of the analyses, Finally, Section five presents discussion conclusion of the paper.

II. Literature Review

Information and communication technology (ICT) adoption practices are considered not only important to MFIs but also their organizational performance. As the microfinance industry grows, ICT is being endorsed as an important tool to facilitate it expansion and reach (Kauffman & Riggins, 2012). According to Serrano-Cinca and Gutiérrez-Nieto (2014), as an important business practice, ICT adoption reduce the operating costs related to the process of providing microcredit. The ICT adoption practices are needed for managing a large number of clients as well as to enable the organization reduce operating costs and improving efficiency.

The studies by Diniz, Jayo, Pozzebon, Lavoie and Foguel, (2014), Kauffman and Riggins (2012) and Abraham and Balogun (2012) have shown that the deployment of ICT was not only able to improve the operations of MFIs, but also viewed as one of the powerful tools for enhancing the performance of these firms.

According to Rozzani and Abdul Rahman (2013), operations in MFIs, particularly those related to data gathering, disbursement and payment, dissemination systems, and microfinance operations problems could be improve with the adoption of more advanced technology. Findings of the study also indicated that many microfinance institutions were unable to adopt new technology due to factors such as high installation costs and lack of participation from clients. Nonetheless, the study pointed out that MFIs have the potential to grow if they adopt advance technology in their current operations.

The study by Congo (2002) indicated MFIs that adopted new technology and capabilities initially incurred additional costs. However, efficient innovative banking technologies such as management information software, credit scoring technology, Internet and, smart card operations can result in the reduction of administrative costs, increase in productivity of staff and improvement in the reliability and consistency of accounts. Therefore, MFIs should identify and adopt the best practices as well as cost-effective ways to use new technology to improve efficiency, outreach and client satisfaction which are important for the sustainability of the microfinance industry.

With regards to the organisational performance, in measuring the performance of an organization, it is necessary to identify as well as know its primary objectives. Organizations establish their primary objectives based on their business mission or the purpose they are created. Once the organizations have determined their specific objectives, they need to work on how best to achieve all of their objectives in a given period of time (Drucker, 1977).

Although the literature reveals that different organizations in different industries and countries tend to emphasize on different performance measurement, findings of past studies indicated that financial profitability and growth to be the most common measures of organizational performance.

For instance, the earlier study by Nash (1993) claimed that profitability is the best indicator to measure whether an organization is performing. According to the author, profitability can be used as the primary measure of organizational success. Doyle (1994) further considered profitability not only as the most common measure of performance but also claimed that western companies primarily used profitability measures to determine the extent to which their companies are performing.

However, in the case of MFIs, practitioners and researchers agree that these firms need to adopt different measures of organizational performance. As social business, MFIs have both financial as well as social objectives. Given this, the performance of MFIs should be measured by using not only financial but also non-financial or social measures (Thomasa & Kumara, 2016).

MFIs have different organizational objectives as compared to the commercial banks. Their organizational objectives are not only confined to financial profitability and sustainability but they also include social objectives such as social outreach as well as the impact of their loans on the lives of the poor people that borrowed from them. The need to measure the performance of MFIs by using both financial and social measures has also been supported by organizations such as the Consultative Group to Assist the Poor (CGAP), The Small Enterprise Education and Promotion Network (SEEP) and the impact network organization (Mustafa & Saat, 2013; Thomasa & Kumara, 2016).

III. Research Methodology

This study used all the MFIs that are license to operate the business of microcredit in Nigeria as its sample. According to the Central Bank of Nigeria (CBN) Directory, These MFIs are currently 872 in Nigeria. The 872 MFIs are located in 37 states of Nigeria. The MFIs ownership involved are; the Community Bank MFIs, the Private MFIs, the Government MFIs, the NGO MFIs, and the Foreign MFIs.

The data for this study was collected through structural questionnaires. The structured questionnaires were addressed to the Managing Director/CEO, General Managers and Senior Managers of the MFIs as the respondents. However, of the 872 MFIs, only 121 completed and returned the questionnaires.

The structured questionnaire used in this study comprised three sections. In the first section, nine items were used to generate information regarding the background of the respondent. The 35 items in section two attempted to collect information regarding the features of the MFIs. Section three has 113 items that focuses on the management practices of the MFIs.

In the section three, the nine items used to measure ICT adoption practices. Four items were used to measuring the performance of the MFIs. Two of four items measure financial performance and the remaining two items measure social performance. The data for measuring the performance was collected for over a period of three years. The ICT adoptionpractices were rated by using a five numerical scale ranging from "Strongly disagreed" (1) to "Strongly Agreed" (5).

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This study used the Least Squares Structural Modeling (PLS-SEM) to analyze the data collected as well as to test the hypotheses of the study. The first part of the data analysis involved descriptive statistics. This involves determining the percentages, means, modes, standard deviations, minimum and maximum value of the items used in collecting the data for the study. In the second part, the partial least squares (PLS) regression modeling was used for testing the research hypotheses. The PLS analyses used in this study involves the assessment of measurement as well as the structural models. The following section briefly describes the statistical procedures used in this study.

In the PLS regression analysis, assessment of measurement model was required for testing hypotheses. The assessment of measurement model in this study involves examining the individual item reliability, ascertaining internal consistency reliability, ascertaining convergent validity as well as discriminant validity. More specifically, this method was employed for testing the reliability and validity of the items and the focal variables used in this study.

In assessment model, the results achieved the loading of all items to be greater than 0.70 and the composite reliability value (CRV) of all constructs are greater than 0.70. The Average Variance Extracted (AVE) values of all constructs are also greater than 0.50. The Composite Reliability (CR) values greater than 0.7. Taken together, these results statistically fulfilled the convergent validity criteria recommended by Hair et al. (2011). In addition, The Cronbach's Alpha scores of all the items are higher than 0.70 these results also suggest the reliability of the measures used in the study.Having ascertained the measurement model, the study also assesses the structural model which applied 5000 bootstrap samples and 121 cases as required by the standard bootstrapping technique (Hair, Hult, Ringle and Sarstedt, 2014).

IV. The Results
Descriptive of the Respondents
Managers/ CEOs Personal Characteristics

Table 1 illustrates 90 respondents (74.4%) are male and 31 (25.6%) are female. 52 respondents (43%) are of aged between 30-40 years and 41-50 years, and 17 respondents (14%) are between 51-60 years old. 25 respondents (20.7%) are Hausa tribe, 44 respondents (36.4%) are Yoruba tribe, 28 respondents (23.1%) are Igbo tribe while others tribe have 24 respondents (19.8%).

Table 1: Managers Personal Characteristics

	Frequency	%
Gender:		
Male	90	74.4
Female	31	25.6
Age:		
30-40 years	52	43
41-50 years	52	43
51-60 years	17	14
Ethnic:		
Hausa	25	20.7
Yoruba	44	36.4
Igbo	28	23.1
Others	24	19.8

Position and Experience in the Microfinance Industry

As shown in table 2, 16 respondents (13.2 %) are MD/CEOs, 58 respondents (47.9%) are GMs and 47 respondents (38.8%) are SMs. 26 respondents (21.5%) have 10 years of experience and above in the MFIs, 92 respondents (76%) have 5-9 years work experience, and 3 respondents (2.5%) have 1-4 years work experience.

Table 2: Position and Experience in the Microfinance Industry

	Frequency	%
Position:		
MD/CEO	16	13.2
GM	58	47.9
SM	47	38.8
Duration In company:		
Less than 1 year	7	5.8
1-3 Years	41	33.9
4-5 Years	58	47.9
6-7 Years	15	12.4
Work Experience in MFIs:		
10 years and above	26	21.5
5-9 Years	92	76
1-4Years	3	2.5

Regression Analyses between ICT adoption practice and performance

ICT Practice

ICT practice variable in this study were measured based on 10 items. The items are set on five point scale ranging from strongly disagree to strongly agree. The respondent in this research indicated the extent of their ICT practice in their organisation. Table 3 shown the mean and standard deviation score of each item for ICT a practice.

Table 3*: ICT practice*

Item	Mean	SD
ICT infrastructure and equipment	4.06	0.649
Up-to-date hardware	3.96	0.712
Up-to-date software	4.00	0.719
Cloud computing	4.14	0.789
Spreadsheet used	4.03	0.730
Smartphone apps used	3.94	0.734
Low network downtime	4.26	0.78
End-users/supports staff communication	4.03	0.645
Up-to-date ICT advancement	4.01	0.736
Teach employees about new technology	4.01	0.725

Performance

In this study, the average of the performance is used to assess the performance of the MFIs. The performance measures consist of average of loans repayment, value of loans disbursed, number of borrowers, and number of women borrowers for the period of three years. The respondents are requested to provide the actual performance figures. The average were computed using the figures provided. Table 4 below shown the minimum, maximum, mean, and standard deviation scores for the average of performance in Naira.

Table 4:*Performance measures*

Indicators	Minimum	Maximum	Mean (M)	Std. Deviation (SD)
Loans repayment	4839.5	236353.6	18445.23	5764.065
Loans disbursed	6740.2	251440	21323.96	3173.023
Total Borrowers	4680	226500	11583.8	25642.22
Women borrowers	2060.2	24940	9740.16	5730.806

The Relationship between ICT Adoption Practices and Performance

Table below presents the correlation results between the business practices and the performance of the 121 MFIs that participated in the study. The results indicate that there were positive significant relationship between ICT adoption practices to ($\beta = 0.100$, $t = 2.586$, $p < 0.005$).

Table 5: Correlations between Business Practices and Performance

Hypothesis	Beta	Standard Error	T-Statistics	P-Value	Decision
H: ICTP -> P	0.100	0.039	2.586**	0.005	Supported

Note: ***P<0.01, **P<0.05, *P<0.1

The result of the correlation analysis appears to provide some support for the hypothesis that the greater the application of the practice of ICT adoption the high will be the performance of the MFIs.

V. Discussion And Conclusions

This study attempted to examine the relationship betweenICT adoptionpractice and performance of MFIs. At general level, the results of the correlation analyses as presented in table 3 indicates significant positive relationship between ICT adoption practice and performance of MFIs. The result of this study provides some empirical evidence that suggest positive relationship exists between ICT adoption practice and the performance of MFIs.

The results of this study support findings of previous studies that found positive relationship between ICT adoption and performanceMFIs (Aloyce & Victor, 2012; Diniz et al., 2014; Riggins & Weber, 2013). The findings of the study further appear to correspond with the general view presented in the literature that suggests the connection between ICT adoption practice and organisational performance. The result of the study seems to demonstrate that the practice of ICT adoption in MFIs will not only be to improve their financial performance but also to increaseits social performance as well.

This study offers implications for owners and managers of MFIs. The study is able to demonstrate that the ICT adoption practice improves the performance of MFIs. More specifically, the of ICT adoption practices are; *Organization use up-to-date hardware, organization use up-to-date software, company use spreadsheet, low network downtime in organization, we continue to invest in the right ICT, organisation teach employees to use the new technology effectively, eliminate guesswork with the help of computer, reduce costs by using the computer to integrate storage and inventory systems, and monitor loans repayment through ICT*. These practices arerelevant and applicable to MFIs. Without these ICT adoption practices, MFIs cannot function proficiently and successfully.

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