Difference in the Sustainability between Microfinancial Institutions Which Offer Combined Services and Those Which Offer Solely Micro-Credit

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Abstract

The sustainability of MFIs in Ghana has been of great concern to all stakeholders due to the rampant collapsing of Microfinancial institutions in recent times. The study assesses the difference in the sustainability of Microfinancial institutions which offer both micro credit and micro savings and those which offer solely micro-credit. The study was conducted in Ghana using data from sample of 20 out of 32 Microfinancial Institutions in the country which had reported to the Microfinance Information Exchange Market from 2006 to 2013. The study adopted quantitative approach and used Mann- Whitney U test in analysing the data. The study found that MFIs which offer combined service are less sustainable than those which offer solely micro credit. The study also found statistically significant difference in sustainability in terms of portfolio at risk greater than 30 but not in terms of operational self –sufficiency between MFIs which offer combined service and those which offer solely micro credit. The study recommended that Deposit-taking Institutions should improve upon liquidity and credit risk management practices by adopting effective treasury management practices.

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The regulator should ensure that only MFIs which are having the right calibre of personnel who will ensure effective treasury management practices be allowed to operate and accept deposit. Finally deposit taking institutions should explore how to integrate technology in their operations so as to reduce cost associated with mobilising micro savings.

Keywords: micro-credit; micro-savings; Operational self-sufficiency; Portfolio at risk; Sustainability.

1. Introduction

Access to financial services has been identified as a potential tool that spouts economic growth and improves the lives of the poor [1].

Microfinancial Institutions have globally been accepted as capable of developing methodologies to extend financial services to the hitherto un-bankable [2]. It has since been identified as a promising tool for reaching the Millennium Development Goals [3]. This is because the core business of Microfinancial Institutions (MFIs) is to develop methodologies which can enable them to extend financial services to the hitherto un-bankable. Microfinance has therefore largely been accepted as part of the financial system of most countries [1]. The critical issue now is to find best practices which will promote their sustainability. The regulatory framework of MFIs in Ghana like most countries does not allow all MFIs to offer and accept deposit. There is the need to research into the differences in the sustainability between the MFIs which offer both microcredit and micro savings and those which offer solely micro credit.

1.1 Statement of Problem

The sustainability of Microfinancial institutions has been of great concern to all stakeholders. This is because Microfinancing has internationally been recognised as development tool [2] cited in [1]. At the early stage of the Microfinance sector of Ghana, the concern was to allow more Microfinancial institutions to emerge so as to promote financial inclusion in the country. This has led to rapid springing up of Microfinance institutions in the country. Currently Ghana can boast of more than 500 Microfinance Institutions, 200 Non-Bank Financial Institutions and 120 Rural and community Banks [4]. The challenge now is how these MFIs can sustain their operations. In line with these in 2008 Bank of Ghana moved to close down number of MFIs in the country which operations are not considered as sustainable [5] and this was followed by the passing of the 2011 Operating Rules of Non-Bank financial institutions. This notwithstanding, 2013 witness upsurge of rampant collapsing of MFIs in the country and the number keeps on adding up to date [5] of which the year 2016 has been outstanding. This often resulted in great loss of money to the depositors and therefore a disincentive to the poor who are mostly their customers to save. It also has implication for confidence in the financial system as a whole [5].

The rampant collapse of MFIs in Ghana has been of great concern for all stakeholders. This is because it is often result in great loss of money to the depositor which is a disincentive to the poor who are mostly their customers to save. It also has implication for confidence in the financial system as a whole. Besides, according to Kipesha (2013)[6] it is only viable MFIs that will be able to provide services in a sustainable manner. This has also been

re-affirmed by Nyamsogoro in 2010 which cited by [7] that it is better not to have MFIs at all than having those that are unsustainable. The phenomenon has caught the attention of many researchers, development practitioners, organizations and governments of developing nations to research into how to enhance the sustainability of MFIs. As pointed out earlier, in Ghana the regulatory framework of MFIs in the country does not allow all the various tiers/ categories of MFIs to accept deposit. The findings of [8,9,10,11] revealed that the type of Product offered by the MFIs affect their sustainability.

Although, some studies have been undertaken in this area, they mostly focused on effect of other varied variables, such as age, capital structure, corporate governance, legal status and outreach just to mention a few on the financial performance of MFIs and not these core services [6,8,6]. The limited studies conducted in this area [11,9,10,12] focused on other aspect of MFIs' performance. For examples, [11] focused on how combined services can help achieve economies of scale through cost reduction; [10] focused on the effect of combined service on outreach which is a proxy of social performance measure and not on the sustainability of the MFIs which is focus of this study. [9] studied differences in the performance between MFIs which offer combined services and those which offer solely microcredit; however the focus was on profitability measures which are shareholders focus and not sustainability (which focuses on the survival of the MFIs). The study of [11]) stated that not all MFIs in every country can offer micro savings in sustainable manner. It is necessary to perform such study in Ghana, especially where such studies are limited in the microfinance literature. This study therefore fills the gap in knowledge by examining the differences in the sustainability between Microfinancial institutions which offer combined services and those which offer solely Micro credit in the Ghanaian context.

Addressing the gap will be useful to the industry and other stakeholders since it will bring to light which of the two categories of financial services is more crucial to the sustainability of the MFIs in Ghana. In addition, it will also point out to the stakeholders if service diversification is crucial to the sustainability of MFIs. Besides, it will bring to the attention of MFIs' management as well as other stakeholders which of the two categories of MFIs are likely to be unsustainable due to the nature of services they render.

1.2 Purpose of the Study/ Research Question/Objective

The purpose of this study is to investigate the difference in the sustainability between Microfinancial institutions which offer combined service and those which offer solely micro credit. The specific objective of the study is to examine the differences in the sustainability between Microfinancial institutions which offer combined service and those which offer solely. The research question is stated as: what is the difference in the sustainability between Microfinancial institutions which offer combined service and those which offer solely micro credit?

1.3 Significance of The Study

Practically, the study brings to attention of MFIs' management which are deposit taking that they stand the greater risk of collapsing. This will guide them to adopt measures that will help cut down cost associated with mobilizing micro- savings. Also adopt more effective treasury management practices to reduce their risk exposures. In terms of policy implication, it draws the attention of the regulator to tighten supervision for

deposit taking institutions. More especially their liquidity requirements and credit exposure limits. Theoretically, the study questioned whether service diversification promotes internal economies of scope for MFIs in every environment?

1.4 Definition of Terms

Sustainability of Microfinancial institutions

Sustainability refers to the ability of MFIs to generate revenue to cover their cost of operation [13]. Sustainability measure focuses on the survival of the MFIs so as to continue to render services that meet the needs of their clients. According to [9,12] sustainability is measured at two levels. That is, financial sustainability and operational sustainability. Reference [13] that the financial sustainability is a measure of the ability of MFIs to cover cost of operation from operating revenue and unsubsidized capital. Whilst Meyer, 2002 cited in [12] refers to operational sustainability as a measure of the ability of MFIs to generate revenue through their operations to cover cost of operation regardless of whether they are subsidized or not. Sustainability in accounting sense is therefore a break-even measure where total revenue equals total operating cost. The standard measure of operational sustainability according to [9] includes operational self-sufficiency and portfolio at risk. The focus of this study is on sustainability of MFIs. For the purpose of this study operational sustainability, is used as a measure of the sustainability of MFIs. This is in line with the view of [13 cited in [1], that sustainability of MFIs is a step towards profitability and this starts with operational sustainability. Two key proxy indicators of operational sustainability are operational self-sufficiency and portfolio at risk > 30 days as indicated by [9].

According to Ledgerwood in 1999 which cited in [14] Operational Self-Sufficiency (OSS) indicates whether an institution is able to cover its operational costs with the income earned from clients. It is calculated as follows: Operating income which includes all financial income (interest and fees income) earned through the services provided, over the operational expenses which also includes all expenses incurred while providing these services. Many microfinance institutions include both loan loss provision and financial costs, if they occur as part of their operating expenses, in this calculation. Mathematically it is expressed as: (OSS = operating income / operating expenses).

Portfolio at risk greater than 30 days is a standard measure of the MFIs' portfolio quality and it is measured by the outstanding loan balance overdue> 30days divided by adjusted gross loan portfolio. Where adjusted gross loan portfolio is calculated as total loan outstanding which has overdue for 365days excluding reschedule and renegotiated loans subtracted from Gross loan portfolio [15]. At least one of these proxies has been used by other researchers like [13,16].

Micro credit

Micro credit is the various loan products offered by a lending institution to its customer [1]. They constitute the loan portfolios in the books of a lending institution. For the purposes of our study, the Natural logarithm of gross loan portfolio was used as a proxy indicator of micro- credit. [18] found that gross loan portfolio relates

positively to sustainability of MFIs and was used by [19] as a proxy for micro credits.

Micro-savings

Reference [9] defines saving as putting aside a certain sum of money to be accessible in the future in exchange for a series of savings made now. However, according to [9], micro- savings could be compulsory or voluntary savings. The various savings products and the amount deposited in the accounts constitute the total deposit of any deposit taking institution. For the purposes of our study, the Natural logarithm of total deposit was used as proxy indicator for micro-savings.

2. Literatur review

This sub-section presents review of theories that underpin the theoretical bases of the study. It also reviews empirical literature that indicated the gaps in literature.

2.1. Review of Theories

The Theory of Economies of Scale

The Theory of Economies of Scale has been accredited to the work of the renowned Economist, Alfred Marshall who devoted several pages in his Book, Principles of Economics to the discussion on the Internal Economies of Scale [20] Marshall was of the view that there is a positive relationship between scale of production and efficiency which ultimately translates to decreasing cost of production. He asserted that large scale production promotes economies of scale such as economies of skills, economies of machinery and economies of material. With the economies of machinery, [20] was of the view that firms which engage in large scale production will keep the utilisation of their equipment steadily high. Since such machines are fixed, full utilisation will result in reduction in per unit cost of production. Such large scale firms also have more resources to spend and have easy access to credit and other related benefits. The economies of skill relate to large labour force and therefore stand to benefit from specialisation and division of labour. He was quick to add that firms also do benefit from what he referred to as external economies as well. These are positive externalities shared by all firms in the industry. It is larger external changes in government policies, infrastructure, social amenities and technological development that are shared by all firms. He however, pointed out that internal economies of scale is firm specific and therefore gives greater competitive edge to firms. He also touched on the age of the firm. To him, firms that have existed for long can have better access to resources and have greater economies of scale.

His theory has been critiqued by writers like Witaker, who were of the view that Marshall's theory can best be practised in imperfect or monopolistic market and not in modern perfect market. Notwithstanding this criticism, [9] applied this theory in his study. This theory is applicable to our study because it seeks to establish if service diversification can lead to cost reduction which will reflect in the sustainability of MFIs.

Agency theory

The agency theory has been accredited to [21] The Agency theory focuses on the relationships between management and shareholders of a corporation which is often referred to as agency relationship. This relationship exists due to owners' (the principal) of an organisation often being separated from management (the agent). This relationship means separation of corporate ownership from control which may possibly result in conflict of interest between the principal and the agent, called the agency problem. This theory is applicable to our study because either shareholders or management of MFIs may favour the decision to accept savings from customers as a collateral substitute or mobilize more deposit as a cheaper source of funding which may be contrary to the expectation of the other party.

2.2. Empirical Perspective

This sub section focuses on review of work of prior researchers in order to shape the focus of the study as well as to establish gaps.

Reference [22] sought to investigate whether the rural Savings and Credit Cooperative Societies (SACCOS) in Eastern, Central and Northern zones of Tanzania were still sustainable after the phasing out of capacity building projects in 2013. The study applied qualitative and multivariate regression analysis and revealed that the SACCOS were not sustainable because of high NPL and failure to issue new loans from 2006-2013. However, deposit and age influenced sustainability positively which confirmed the findings of [6]. In addition, loan size had significant effect on sustainability of MFIs since the larger the loan size the more sustainable the institutions. This is because larger loan size reduces cost associated with loan screening and monitoring. The study also revealed that savings and deposit to total assets influenced outreach negatively. This is in line with the findings of [23]) which showed negative impact of leverage on outreach but contrary to the findings of [9] who found that institutions which offer deposits have wider coverage of outreach.

His study did not focus on establishing difference in the sustainability between the two categories of MFIs in terms of deposit taking but just to establish the state of affair of the institutions after the state's support was withdrawn.

Reference [23] used panel dataset of 782 MFIs across 92 countries, and found decreasing leverage with the sustainability of the MFIs. Also, leverage has negative impacts on outreach. The study found that increasing leverage raises the profitability of MFIs. This study like [6,22] considered the effects of debt and other variables on the performance of MFIs but establishing difference in the sustainability between the two categories of MFIs in terms of deposit taking.

Reference [9] linked services (micro credit and micro savings) and capital structure on both the social performance of Microfinance Institutions of Central and Eastern Europe and the New Independent state. He used Propensity Matching Score (PMS) and SUR to analyse the effects and relationship between independent variables and the dependent variable.

The study found that Microfinance Institutions which accept deposits are more sustainable and cover wider outreach which contradicts the findings [23,22]. The study therefore stated that the deposits should be

encouraged since it is a better way to tailor better Microfinance services to the needs of the Microfinance service users. He however found that portfolio quality on the average is better for institutions that do not accept deposits compared to those which accept deposits. Reference [9] also found that neither bank loan nor micro savings play significant influence on the financial performance of MFIs. The study therefore stated that savings should only be encourage as a better tool to transform the life of the services users but not because it is helps to promote the financial performance of the MFIs. The study also found that MFIs which offer solely microcredit have their portfolio less risky than those which offer both services.

The study used experimental model which is best used when the researcher has total control over the observed variables. But in social science one cannot have absolute control over the observed. More so, the fact that the researcher used secondary data means that the researcher had no control over the observed variables. This means the analytical model may affect the validity of the findings. Besides, the study focused on profitability measure and not sustainability which is the concern of our study.

Reference [11] studied joint production of microloans and micro deposits on economies of scale of MFIs from over 50 countries. Their study adopted quantitative approach. They made use of semi-parametric smooth coefficient model to estimate a generalized cost function for a dataset from rated MFIs with over 777 annual observations on MFIs from over 50 countries. Their findings indicate that economies of scale are significant across both models since in both models, over 70 percent of the MFIs in the dataset experienced reductions in cost by offering both savings and loan services. They also found that not all MFIs that offer micro- savings are sustainable. They therefore argued that if delivery of savings is important from policy perspective, however, it should not be expected to promote financial sustainability of all MFIs in every environment. This finding is contrary to that of [9] and [10] who established that combined service promotes sustainability of MFIs. This may be due to the differences in scope of coverage of the study area. Their result again showed that economies of scale vary across the type of services and country where the MFIs operate. This implies that the environment in which MFIs operate affects their cost economies.

Their study however focused on how combined services can result in economies of scale through cost reduction and not the difference in sustainability of the two categories of MFIs in terms of the kind of combination of the core financial service offered.

Reference [10] studied the impact of combined microfinance services (credit plus savings or insurance) on poverty outreach in Latin America and the Caribbean. The study adopted quantitative approach and sampled 250 MFIs. The study used OLS to estimate the impact. The findings revealed that the impact of combined service on depth of outreach is marginal although, statistically significant at least with one of the variables of interest (efficiency, productivity, sustainability or portfolio quality indicators). This supports the findings of [9] who established that MFIs which offer microcredit combined with savings perform better in terms of outreach. However, study rather focused on outreach which is a proxy for the social performance measure and not towards the financial performance.

Reference [12] studied factors affecting sustainability of Microfinance Institutions in Ethiopia. The study

adopted quantitative approach and used a balanced panel from 14 Microfinance Institutions over the period of 2002-2010. Study found positive and significant effect of loan portfolio on sustainability of Microfinance Institutions. It however, found negative relationship between number of borrowers and profitability. Reference [12] recommended further research into other aspects of Microfinance Institutions including Microfinance Institutions products delivery methodology. This is because more clients (loan size) of Microfinance Institutions enable them to enjoy economies of scale hence reducing cost which leads to sustainability. The study like that of [1,19,23,22] did not focus on examining the difference in sustainability of the two categories of MFIs in terms of the kind of combination of the core financial service offered.

Reference [19] studied in the financial determinants of sustainability of Microfinance Institutions in East Africa. He employed unbalanced Panel Data from 23 Microfinance services. He used Binary and Ordinary Probit regression model. The finding showed that micro-credit, measured by gross loan portfolio had positively significant effect on sustainability. The study however revealed that breadth of outreach and deposit mobilizations are not important determinants of sustainability of Microfinance Institutions. His study only determine factors which influenced sustainability of MFIs and not the difference in sustainability between the two categories of MFIs in terms of the kind of combination of the core financial service offered. .

2.3 The Research Context

According to [3] the concept of microfinance is not new in Ghana. According to this report, it has always been a common practice of the people Ghana to save and or take small loans from individuals, groups, and relations to serve as capital for microenterprise such as small retail businesses or farming ventures. Oral tradition suggested that the first credit union in Africa was probably established in Northern Ghana in 1955 by the Canadian Catholic missionaries, which were there at that time. However, Susu, which is one of the current microfinance schemes in Ghana, is thought to have originated in Nigeria and spread to Ghana from the early 1900s. Over the years, the microfinance sector has thrived and evolved gradually from provision of subsidized credit into its current state. Thanks to various financial sector policies reforms particularly the promulgation of PNDC Law 328 of 1991 and the Non- Bank Financial Institutions Act 2008, which allowed the establishment of non- bank financial Institutions such as Savings Loan companies, Discount houses, finance houses, Financial NGOs, Susu companies, Money Lenders etc. in the country.

Initially these institutions were generally put into three broad categories based on their legal status as follows:

[1] Formal suppliers of microfinance (i.e. rural and community banks, savings and loans companies, commercial banks)

1. Semi-formal suppliers of microfinance (i.e. credit unions, financial Non-governmental organizations (FNGOs), Susu and saving companies and cooperatives);

• Informal suppliers of microfinance (e.g. Susu collectors and clubs, rotating and accumulating savings and credit associations (ROSCAs and ASCAs), money lenders and other individuals)

However in 2011, as an effort to regularise the operations of Micro financial institutions in the country, Bank of Ghana passed Operating Rules and Guidelines for micro financial institutions. In this Guideline, the regulator adopted the tier system. They are currently grouped into four tiers as stated below:

1. Tier 1 activities shall comprise those undertaken by Rural and Community

Banks, Finance Houses and Savings and Loans Companies – These institutions are regulated under the Banking Act, 2004 (Act 673)

2. Tier 2 activities – Those activities undertaken by:

i. Susu companies and other financial service providers, including Financial Non-Governmental Organizations (FNGOs) that are deposit taking and profit making.

ii. Credit Unions. However, credit unions are not regulated under this Notice. A Legislative Instrument under the Non-Bank Financial Institutions (NBFI) Act, 2008 will soon be passed to regulate their activities.

3. Tier 3 Activities – Those activities undertaken by:

i. Money lenders

ii. Non-deposit taking Financial Non-Governmental Organizations (FNGOs).

Money lenders and Financial NGOs are encouraged to belong to an umbrella Association. FNGOs desiring to take deposits shall convert from companies limited by guarantee to companies limited by shares.

4. Tier 4 activities – Those activities undertaken by

i. Susu collectors whether or not previously registered with the

Ghana Cooperative Susu Collectors Association (GCSCA);

ii. Individual money lenders.

Individuals and entities engaged in the above activities are encouraged to form associations for the purpose of furthering their objectives and or dealing with regulators and other stakeholders [24]

In 2013, to further streamline their operations the regulator separated the deposit taking institutions from the non- deposit taken ones. Those that are deposit taking were classified under tier 2 whiles those that do not accept deposit were considered as tier 3. The regulator however, permits non- deposit taking institutions to demand compulsory savings as collateral substitute. This type of saving is associated with credit facilities. As a collateral substitute, such savings are to be kept in escrow account and accessible to the clients after successful repayment of credit facility. It is therefore often considered by the client as more of condition to access credit.

In the [25] operating guideline those institutions who undertake tier 1 activities were excluded from micro financial institutions and were generally referred to as Non- bank Financial Institutions. All these efforts are geared towards the sustainability of micro-financial institutions and the financial system as a whole. More importantly, to ensure that MFIs fulfil their core mandate of extending financial services to the under privilege in a sustainable manner. The efforts to make MFIs sustainable to deliver their core mandate, stems from the realisation from literature, on how powerful micro financing had helped alleviate poverty and empowered the marginalised in countries like Bangladesh.

3. Methodology and data

This section focuses on the research approach, description of type and source of data, population, sample size and justification.

The study examines difference in sustainability between MFIs which offer combined service and those which offer solely micro credit in Ghana. The study therefore adopts quantitative approach. It uses secondary data obtained from the Microfinance Information Exchange database (the MixMarket online platform, 2013). The Microfinance Mix market is a platform where MFIs all over the world voluntarily report their financial and operational data to. It is a credible source used by many microfinance researchers. The study sampled 20 of the 32 MFIs operating in Ghana which had reported to the platform excluding Rural and community banks and credit unions since in Ghana these institutions operate under different regulation. The selection of this sample size is based on the criterion that the institution should report at least three years within the years of study and must still be in operation as MFIs as at 2013 when data was obtained. Also must have information on their products and credit pricing on the McrofinanceTransperency.org or from their web home page to enable us to know those institutions which accept deposit and those which do not. Based on information on their products and credit pricing from the Microfinance Transparency.com and their various Web home pages only four (4) of the MFIs offer solely micro-credit and sixteen (16) MFIs offer both micro- credit and micro-savings. This is further confirmed by the zero throughout recorded in the deposit column of such institutions which offer solely micro credit in the data obtained from the MixMarket.

Definition of variables

The study uses two independent variables, namely "Accept deposit" and "Do not accept deposit". Accept deposit indicates institutions which offer combined service (offer both micro credit and savings) while do not accept deposit indicates institutions which offer solely microcredit. These variables have also been used by [9]. These two variables are used as dependent variables: Operational Self- sufficiency (= OSS) which measures the ability of the MFIs to cover its operating cost from revenue generated irrespective of the source of funds. Portfolio at risk greater than 30 days ( ) is a standard measure of the MFIs' portfolio quality and is measured by the gross loan divided by loan loss rate. These two variables are used as proxies for financial performance since [9] stated that they are proxy indicators for operational sustainability. Besides, Operational self-sufficiency was used by [13] as a measure of financial performance and Portfolio at risk greater than 30days was used by [16]

3. 2 Data Analysis Techniques

To examine whether differences exist in the financial performance between Micro financial institutions which offer combined services (offer micro- credit and savings) and those which offer solely micro-credit, non-parametric Mann-Whitney U Test was employed instead of the parametric independent samples t-test since the sample size of the MFIs are not equal and also bypasses the normality assumption [26]. However, we also compute independent samples t-test for comparison of the two results. This is based on the fact that the independent samples t-test makes room for differences in sample size by estimating the result for equal Variances assumed and equal variances not assumed. Since it is not the preferred technique, we did not test for normality assumption which is basic requirement for all parametric tests. Therefore, the interpretation of the independent samples t-test should be done with care.

The Analytical Model: The Mann–Whitney U

The Mann- Whitney U test is a non-parametric test which is mostly used when a particular sample tends to have larger values than the other. Also, unlike the t-test, it bye- passes the normality assumption. However, it is equally as efficient as the t-test on normal distributions [27,26].

The test-statistic denoted as U is then given by [26].

Where n1 is the sample size for sample 1, and R_1 is the sum of the ranks in sample 1. It must be noted that it does not matter which of the two samples is considered sample 1. It can also be modelled as:

The smaller value of U_1 and U_2 is the one used when consulting significance tables. The sum of the two values is given by:

Knowing that $R_1 + R_2 = N (N+1)/2$ and $N = n_1 + n_2$, and doing some algebra, we find that the sum is $U_1 + U_2 = n_1 n_2$. Our study adopted the second model since we want to determine the significance difference between the sustainability of the two categories of MFIs. Also, the sample size of the larger sample is greater than 8 (eight). The Mann-Whitney test was chosen over the independent samples t-test because the population sample of MFIs which offer combined services are larger than those which offer only micro-credit. Also, the study involves a single independent variable with two levels. From the model U_2 denote sample size2 (institutions which "Do not accept Deposits". that is offer solely micro-credit). U_1 denotes sample size1 (institutions which "Accept Deposits". that is offer both micro-credit and savings). The dependent variables are represented as Fin_{Perf1} = OSS (financial performance indicator 1- operational self-sufficiency) and Fin_{Perf2} = PAR 30days (financial performance indicator 2, Portfolio at risk greater than 30 days)

4. Results of the study

The result of the rank test from Table 4.1 below indicates that MFIs which do not accept deposits (offer solely microcredit) perform slightly better in terms of their operational self-sufficiency than those which accept deposit (that is those which offer both micro- credit and micro savings (Mean rank =56.56>55.29). This tells that

accepting micro savings in Ghana is costly, thus increasing cost of operation. It also tells the deposit taking institutions are veering into the business of the traditional banks as a result are facing competition in mobilizing deposits.

Again MFIs that accept deposits performed poor in terms of portfolio at risk greater than 30 days than those that do not accept deposit (Mean Rank =62.48 > 19.81). This result has to be interpreted with care this is because portfolio at risk more than 30days is a negative indicator. Therefore the higher mean ranking rather indicates more having higher poor quality of portfolio. That is more Portfolios go bad more than 30days. The result therefore point to the fact that MFIs which offer solely microcredit have portfolios that that are less risky as compared with those which offer combined services. This may be due to the fact that the institutions which accept deposit are likely to give out more credit facility aggressively. Refers to the tables below:

Table 4.1: Ranks Statistics (Mann-Whitney U Test)

	accept	N	Mean Rank	Sum of Ranks
	1= accept	92	62.48	5748.50
FIN_{PER2} (PAR30)	2= Don't accept	18	19.81	356.50
	Total	110		
	1=accept	92	55.29	5087.00
FIN_{PER1}(OSS)	2= Don't accept	18	56.56	1018.00
	Total	110		

Source: Author's Analysis (2016).

The table 4.2 below displays the result of the test statistic as well as the asymptotic significance (2-tailed) p-value. This test helps to estimate whether the differences produced by the rank test are statistically significant or not. From the results, the differences in operational self-sufficiency between MFIs which accept deposits and those which do not is statistically insignificant (U=809.000; Z= -.154; p=.878). Meaning that there is no statistically significant difference between operational self -sufficiency of MFIs whether they offer combined service or solely micro credit.

However, there is a statistically significant difference in sustainability in terms of portfolio at risk greater than 30 between MFIs which accept deposits and those which do not.

This implies that although offering combined service or solely micro credit might not significantly affect operational self-sufficiency differently, it does have statistically significant difference on portfolio at risk greater than 30days (U=185.500; Z=-5.193; p=0.000≤0.05). This confirms the findings from the rank statistic which shows that MFIs which offer solely micro credit are better at reducing their loan lost. Refers to Tables4.2

Table 4.2: Test Statistics

	FIN_{PER2} (PAR30)	FIN_{PER1}(OSS)
Mann-Whitney U	185.500	809.000
Wilcoxon W	356.500	5087.000
Z	-5.193	-.154
Asymp. Sig. (2-tailed)	.000	.878

- Grouping Variable: accept deposit

Source: Author's Analysis (2016).

The test statistic results show that we partially accept the null hypothesis and partially reject it, that there is no significant difference in the performance of MFIs which offer combined service and those which offer only micro-credit. This is because for operational self- sufficiency the null hypothesis was accepted but rejected in the case of portfolio at risk greater than 30 days.

5. Discussion of results and conclusions

5.1 Discussion of Results

The finding in our study indicates that MFIs which do not accept deposits (offer solely microcredit) perform slightly better in terms of their operational self-sufficiency than those which accept deposit (that is those which offer both micro- credit and micro savings. This is contrary to the finding of [9] who found that Microfinance Institutions which accept deposits are less sustainable. It however supports the findings of [11], who found that not all MFIs offer micro- savings are sustainable. They therefore argued that if delivery of savings is important from policy perspective, it should not be expected to promote financial sustainability of all MFIs in every environment. The relative low sustainability of MFIs which offer combined services may be due to high competition for deposit among the deposit taking institutions. This result in high interest being promised to pay on such deposit to clients and high administrative cost associated with door-door mobilising such funds. This is worsened by the associated liquidity risk and operational risk largely due to fraudulent acts. The result points out clearly where most of the MFIs which collapse in the country are those that offer combined services DKM of Brong- Ahafo region and 8 others in Volta region). The study again finds MFIs which accept deposits perform poorer in terms of portfolio quality than those that do not accept. This support the findings of [9] who found that portfolio quality is less risky for institutions that do not accept deposits compared to those which accept deposits. This may mean that MFI which accept deposit may engage in aggressive credit expansion without putting effective measures in place to retrieve such loans. Also the relationship build over time with the depositors especially those who are cherished ones may pose a challenge to the MFIs to take drastic measures to retrieve the loan within the stated duration. This finding also explained why Deposit taking institutions are less sustainable than those which offer solely micro credit. The losses incurred through loan lost reduce their revenue. Also they may incur some cost in retrieving the overdue credit facility. All this is likely to reduce their

operational self-sufficiency hence sustainability. The study also finds statistically significant difference in sustainability in terms of portfolio at risk greater than 30 between MFIs which accept deposits and those which do not. This confirms the findings of [11] who found that not all MFIs in every environment are able to deliver micro savings in a sustainable manner.

5.2. Conclusions and Recommendation

The aim of the study is to examine difference in the sustainability between MFIs which offer combined services and those which offer solely micro credit. The study was conducted in Ghana using a sample of 20 MFIs from the MixMarket data base from 2006 to 2013. Mann-Whitney U Test is employed in the analysis. The study concludes that MFIs which offer combined service are less sustainable than those which offer solely micro credit. This means deposit taking institutions can easily collapse which actually confirms what is happening in the Microfinance sector in Ghana. This suggests that mobilizing micro- savings in Ghana is costly due to high competition and labour intensive nature. The study also concludes that there exist statistically significant differences in sustainability in terms of portfolio at risk greater than 30 but no difference in terms of operational self –sufficiency between MFIs which accept deposits and those which do not. Practically the study brings to attention of MFIs' management which are deposit taking that they stand the greater risk of collapsing. In terms of policy implication, it draws the attention of the regulator to tighten supervision for deposit taking institutions. Theoretically, the study questioned whether service diversification will promote internal economies of scope for MFIs in every environment. The study recommends that Deposit-taking Institutions adopt effect treasure management practices to reduce their risk exposures. Finally deposit taking institutions should explore how to integrate technology in their operations so as to reduce cost associated with mobilising micro savings.

Reference

[1] Avortri. C & and Wereko. T.B.(2016). "The effect of service delivery approach of Microfinancial institutions on their performance: A conceptual paper". International Journal of Scientific Research and Innovative technology, 3 (6)

[3] Bank of Ghana (2007). 'A note on Micro- financing in Ghana', Bank of Ghana working paper series. Bank of Ghana. Available http://www.adb.org/Documents/Policies/Microfinance/financepolicy.pdf (retrieved on 18 April 2012)

[24] Bank of Ghana, (2011). 'Operating rules and guidelines for microfinance institutions',notice no. Bg/gov/sec/2011/04(available at http://www.bog.gov.gh/privatecontent/licensePolicyGuidels/licensing of non-bank financial institutions (retrived on 18 April 2013)

[4]Bank of Ghana (2016).'Register of Institutions Non-Bank Financial

Institutions' (available at http://www.bog.gov.gh/privatecontent/register of nonbank financial institutions (retrieved on 20 May 2016)

[25]Bank of Ghana (2013). 'Notice to banks, non-bank financial institutions and the public. Notice no. bg/gov/sec/2013/05 "microfinance institutions: revision of the minimum paid up capital and liquidity requirement' (available at http://www.ceditalk.com/2013/09/bog-raises-minimum-capital-for.html retrived on 1 April 2014)

[5] Boateng, F. G., Barnie, A. , Dwumah, P, Acheampong, M. and Ackom- Sampene, E. (2016). 'Collapsing of Microfinance Institutions in Ghana: An account of how four expanded imploded in the Ashanti Region'. International Journal of African development. Vol 3 (2)

[2] Boateng I. A. & Agyei A. (2013). 'Microfinance in Ghana: Development, Success Factors and Challenges'. International Journal of Academic Research in Accounting, Finance and Management Sciences Vol. 3, No. 4, pp. 153–160

[15] GHAMFIN (2014). 'Performance monitoring and benchmarking of microfinance institutions in Ghana: Trends in the Industry during the 2000s (2006 – 2012)'

[7]Gashayie, A. & Singh, M. (2015). 'Factors that affect Financial Sustainability of Microfinancial Institutions: Literature Review'. European Journal of Business and Management Science vol 7(7)

[11]Hartarska V., Parmeter, C. & Mersland, R. (2011). ,Should All Mircofinance Institutions

Mobilize Micro-savings?' Evidence from Economies of Scope, Oxford Bulletin of Economics and Statistics

[23] Kar, A. K. (2012). 'Does capital and financing structure have any relevance to the performance of microfinance institutions?' International Review of Applied Economics, 26(3), 329-348. doi:10.1080/02692171.2011.580267

[16]Kar, A.K & Swain, R.b(2013).'Interest rate and financial performance of Microfinancial

institutions' Recent Global Evidence. European Journal of Development Research 33: p. 1-20. doi: 101057/erjdr

[9] Khachatryan, K. (2013). 'Managing microfinance institutions: linking performance with services and capital portfolio'. Thesis Submitted in fulfillment of the requirements of the Degree of Doctor of Philosophy to the Department of Economics and Finance. University of Nice Sophin Antipolis.

[13]Kipesha E.P & Zhang, X. (2013) 'Sustainability, profitability and outreach Tradeoffs: Evidences from Microfinance Institutions in East Africa' European Journal of Business and Management, ISSN 22221905 (Paper) ISSN 2222-2839 (Online),5 (8)

[6] Kipesha E.F. (2013). 'Impact of size and size and age of firm's performance: Evidence from Microfinance Institutions in Tanzania' Research Journal of Finance and Accounting. ISSN. 2222-1697 (Paper) ISSN 2222-2847 (Online), 4 (5)

[12] Kinde (2012), 'Financial Sustainability of Microfinancial Institutions in Ethiopia' European Journal of Business and Management Vol.4 (5)

[22] Magali, J.J (2013). 'Are Rural SACCOS in Tanzania Sustainable?' International Journal of

management Science and Business Research ISSN (2226-8235) vol.3. Issue1

[20] Marshall, A. (1910). 'Principles of Economics' Sixth Edition, London, MacMillan and Co

[21] Mitinick, M. B. (2013). The origin of the Agency theory: an account by one of the theory originators'

[8] Nyamsogoro, G.D. (2010) . Financial Sustainability of Rural Microfinancial Institutions in

Tanzania. . Thesis submitted in partial fulfilment of the requirement of Doctor of Philosophy, University of Greenwich

[26] Opoku, J.Y. (2006) Tutorials in inferential social statistics, Ghana University Press, Accra

[10] Rossel-Cambier, K. (2010). 'Do Multiple Financial Services Enhance the Poverty Outreach of Microfinance Institutions?' CEB Working Paper N°10/058 2010

[19] Tehulu T.A. (2013). 'Determinants of financial sustainability of Microfinance Institutions in East Africa' European Journal of Business and Management. Vol. 5 No.17

[18] Vingo, T (2012), 'Capital Structure and performance of Microfinancial Institutions. A cross-

country Analysis and a case study of Vietnam'. A thesis submitted to University of Birmingham for a degree of Doctor of Philosophy, Department of Economics Business School College of Social Sciences University of Birmingham

[14] Yeboah, E.H.(2010), 'Microfinance in Rural Ghana. A view from below' Thesis Submitted in fulfillment of the requirements of the Degree of Doctor of Philosophy. University of Birmingham. Available on http://etheseisbham.ac.UK/1198/ (retrieve on 18th April, 2012)

[27] Zar, J. H. (1998). Biostatistical Analysis. New Jersey: Prentice Hall International.