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Determinants Of Sustainability Of Microfinance Institutions In Ghana

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Abstract: ***The objective of this study was to determine the sustainability of MFIs by components of the sustainability construct (financial, operational, expansion and growth and environment and regulatory sustainability) and subsequently examined the extent to which these components influenced the sustainability of microfinance institutions. Employing a cross-sectional survey design, data was collected using self-administered questionnaires. Thirty (36) microfinance institutions across Ghana and sample size of 331 staff of these institutions were interviewed. The exploratory factor analysis and t-test comparisons were used to analyze the data. The study found that the level of expansion and growth sustainability was the highest sustainability indicators whilst financial sustainability was the lowest among all the other indicators. It also revealed that financial, operational, expansion and growth and environment and regulatory sustainability had statistically significant positive impact on the sustainability of MFIs in Ghana. It is recommended that players of microfinance institutions should require international partners to boost their financial viability.***

Keywords: Microfinance, financial sustainability, operational sustainability, expansion and growth sustainability, environment and regulatory sustainability.

JEL Codes: G29; O12; O16

I. INTRODUCTION

In recent times, the rising awareness of the promises of microfinance in economic growth, poverty reduction together with the rising number of microfinance institutions (MFIs) has effectively placed the subject of microfinance at the apex of the agenda in most evolving countries (Awojobi, 2011). Obuobi and Polio (2010) also assert that microfinance Institutions (MFIs) currently provide financial services to an estimated 15 percent of the country's total population as compared with 10 percent for the commercial banking sector.

This term sustainability refers to the ability of a microfinance institution (MFI) to cover all of its costs through interest and other income paid by its clients. Financially, sustainable MFIs can become a permanent part of the financial system: they can continue to operate even after grants or soft loans are no longer available. Sustainability of an organization refers to the ability of the organization to endure and conventionally; this is achieved through recovery of costs and creation of some additional funds that allows the organization to grow.

However, MFIs face an apparent tension between achieving financial suitability and contribution to poverty reduction. In furtherance of the above, the underlying factors that influence the sustainability is therefore essential not only for the managers of the MFIs, but for various stakeholders such as the Bank of Ghana, Governments ,Apex, MASLOC, GHMFIN and other financial authorities etc.

The objective of the paper is to assess the level of sustainability of microfinance institutions in Ghana and subsequently *examine the extent to which extracted factors have influence on sustainability of microfinance institutions*. Since the introduction of microfinance in Ghana, MFIs continue to fold up because of some of the institutions' inability to meet deposit withdrawal requirements. The

impacts of these challenges have been felt in reduced size and collapses and as a result hundreds of account holders have lost their savings to such institutions (Domfeh, 2013).

The problem is that significant number of those engage in microfinance services continue to struggle with sustainability. The existing studies on this subject matter have focused mainly on financial health as the only essential element for sustainability without considering other dimensions. Furtherance to this, factors accounted for its impact has not been looked at in Ghanaian context. In addition, the results are mixed and empirical evidence regarding the determinants of MFIs' sustainability is also missing. For instance, Kinde (2012) studied the impact of sustainability on MFIs in Ethiopia from the period of 2002 to 2010 using only financial self-sufficiency. Kinde ((2012) focused and limited it dimension of sustainability to only financial self-sufficiency. However, financial sustainability alone may not determine the survivorship of an enterprise. Thus for comprehensiveness, Kinde (2012) could have considered both perspectives of financial and operational sustainability. In addition, whiles Kinde (2012) used mostly secondary data and limited sustainability to financial, the present study uses primary instrument to collect primary data to measure the variables. In addition, the present study estimates sustainability in a broader perspective including financial, operational, expansion and growth and environmental and regulatory sustainability.

Kipesha and Zhang (2013) examined operational sustainability of microfinance institutions in East Africa over a period from 2008 to 2011 using sample size of 47 (Burundi, Kenya, Rwanda, Tanzania, and Uganda). Kipesha and Zhang (2013) also limited it dimension to measure sustainability to operational efficiency of MFIs. Besides, the sample size of 47 used as a representative of all microfinance institutions operating in Burundi, Kenya, Rwanda, Tanzania, and Uganda is too small. This makes his study less comprehensive. The findings of the current study contradict this finding methodologically and also in terms of its conclusions.

In a similar vein, Kaur (2014) also used operational self-sufficiency (OSS) –which is the ratio of operating income to the sum of operating expenses and provision for loans losses as measure of sustainability. Kaur limited its' dimension to only operational efficiency which makes his study less comprehensive.

The researcher is therefore motivated to conduct this present study since much have not been said in the Ghanaian context regarding quantitative empirical evidence let alone high order statistical inferential. It is therefore important to investigate factors that influence the level of this sustainability. This would provide a guide to the operators to understand the theoretical dynamics. The study therefore has extended the work of Kinde (2012), Kipesha and Zhang (2013) and Kaur (2014) by including expansion and growth and regulatory and environmental dimensions to construct sustainability of MFIs to determine how the known key factors affect the sustainability of MFIs in Ghana so as to enhance the reliability of the findings and draw vivid conclusions from the MFI survivorship.

It is against this backdrop that this study empirically makes an attempt to fill the gap by measuring the level of sustainability components and also establish the extent of its important to microfinance institutions in Ghana.

The study found that the most significant factor for sustainability of MFIs in Ghana is expansion and growth sustainability. This is followed by environment and regulatory sustainability, operational sustainability and financial sustainability respectively. The results imply that the key factors for sustainability of MFIs in Ghana include Operational Sustainability, Expansion and Growth Sustainability, Environment and Regulatory Sustainability and Financial Sustainability.

The rest of the sections address the following: A brief review of the literature on the determinants of MFIs' sustainability, methodology, data results, and detailed discussion of the results and finally, conclusion and recommendations of the study.

II. LITERATURE REVIEW

Literature review has revealed that some authors consider microfinance as a tool for empowering the poor, whereas others claim that microfinance bears a social burden; i.e., microfinance is a social liability that consumes scarce resources, and does not significantly produce long-term impacts. Bouman and Hospes (1994) argued that the small-scale enterprises that are backed by microcredit programs have only restricted potential to develop/grow and thus they have not got prolonged impact on the underprivileged/poor. It has been claimed that microfinance programs make the underprivileged and the poor become economically reliant on the program.

Microfinance has been recognized to capture the elements of common perception, deepening, speeding up and broadening the interconnection between economic development and poverty reduction. According to Schreiner and Colombet (2001, p.339), microfinance is the endeavour to enhance access to small loans and small deposits for the poor households who have been neglected by the banks. Awojobi (2011) also defines microfinance as a process of development by means of providing savings and microcredit service to the small-scale entrepreneur. Drawing from these definitions, it can be said that microfinance financially strengthens the low-income earners in order to allow them perform economic activities which could improve their living standards. This means that microfinance institutions need to be sustainable to champion the course of credit facilities to the low-income earners.

The term sustainability has been defined in various ways by several authors. For instance, while Navajas, Schreiner, Meyer, Gonzalez-Vega, and Rodriguez-Meza (2000) define sustainability as permanence, Schreiner (2000) defines sustainability as the capacity to reproduce performance in the course of time. Aveh et al. (2013) also explained that sustainability in microfinance refers to the measure of continuity of improved life and operation of microfinance institutions. In another vein, Kipesha and Zhang (2013) assert that sustainability in microfinance institutions is the ability of the microfinance institutions to meet their continuing

operating costs through the operating revenue generated from their core activities.

With respect to microfinance, sustainability can be understood from different perspectives namely: institutional sustainability (Acharya & Acharya, 2006; Rao, Pichon, Uquillas, Frechione, Barkin, Moscardi, & Ocampo, 2000) market sustainability; legal policy environment sustainability; and impact sustainability. Although, the sustainability of microfinance can be considered from four major dimensions, however, this study limits its focus to institutional sustainability.

From the above definitions, it could be concluded that microfinance institution will be sustainable if it can generate funds to ensure that it continuously operates and renders services to its clients even in the absence of external aid.

A number of the empirical studies on the sustainability of microfinance have measured the sustainability of MFIs using various indicators of sustainability. For instance, whereas Kinde (2012) used financial self-sufficiency (FSS) which is the ratio of adjusted revenue to adjusted expense as an indicator for financial sustainability, Kaur (2014) used operational self-sufficiency (OSS) –which is the ratio of operating income to the sum of operating expenses and provision for loans losses – as measure of sustainability. However, Borbora and Sarma (n.d.) employed both operational self-sufficiency (OSS) and financial self-sufficiency (FSS) as proxies for sustainability. However, since financial sustainability is just one of the sub-dimensions of institutional sustainability, for comprehensiveness; this study follows CIDA (1999) framework which measures sustainability from 19 questions which encompass financial sustainability, expansion and growth, environment and regulatory and operational sustainability to measure the sustainability of MFIs.

The financial sustainability of MFIs in Ethiopia was examined by Kinde (2012). The study focused on determining factors that affect the financial sustainability of Ethiopia MFIs. The proxy for financial sustainability as the dependent variable was financial self-sustainability. The independent variables of the study were depth of outreach, breadth of outreach (measures of outreach), cost per borrower (indicator of efficiency), MFI capital structure, productivity of staff measured by borrower per staff member and donated equity (measure of dependency ratio). The findings of Kinde's (2012) obtained from multivariate regression analysis indicated that microfinance depth of outreach, breadth of outreach, cost per borrower and dependency ratio affect the financial sustainability of microfinance institutions in Ethiopia. However, the microfinance capital structure and staff productivity have insignificant impact on financial sustainability of MFIs in Ethiopia. While Kinde's (2012) study used the appropriate method of regression analysis to determine the effect of outreach to the poor, it limited the dimension of sustainability to only financial self-sufficiency however, financial sustainability alone may not determine the survivorship of an enterprise, other sustainability dimensions such as operational self-sufficiency is essential. Thus for comprehensiveness, Kinde (2012) could have considered both perspectives of financial and operational sustainability.

The presence trade-offs between outreach, profitability and sustainability to the poor in East Africa were examined by Kipesha and Zhang (2013) for microfinance institutions over a period of four years from 2008 to 2011. The sample used for the study was 47 microfinance institutions operating in Burundi, Kenya, Rwanda, Tanzania, and Uganda. Using a quantitative research approach for the study, an unbalanced panel regression analysis was used to analyze the data. The indicator used in the measuring of sustainability was operating self-sufficiency (OSS) whereas eight indicators comprising return on asset (ROA), yield on gross loan, ratio of financial revenue to gross loan portfolio, ratio of operating expenses to asset, ratio of gross loan to asset, debt to equity ratio, borrowers per staff ratio and cost per borrower ratio were used as the proxies in measuring profitability. Like Kinde (2012), Kipesha and Zhang (2013) also used limited dimension to measure sustainability. Whiles Kinde (2012) measured sustainability from financial perspective, Kipesha and Zhang (2013) used operational efficiency.

The strength of Kipesha and Zhang's (2013) study laid in the adoption of the six-variable outreach framework namely depth of outreach; breadth of outreach; length of outreach; cost of outreach; worth of outreach and the scope of outreach which makes the study comprehensive. However, the use of just OSS as a measure of sustainability of MFIs makes the study less comprehensive in that OSS is just one of the two sub dimensions of financial sustainability which in itself is just one of the four dimensions of institutional sustainability. The authors could have used both operating self-sufficiency and financial self-sufficiency to make the study even more comprehensive. In addition, the sample size of 47 MFIs is too small to be used as a representative of all microfinance institutions operating in Burundi, Kenya, Rwanda, Tanzania, and Uganda.

In summary, empirical studies regarding the determinants of sustainability provide mixed evidence; on the other hand, there is no study that empirically combines to examine the determinants of the above components sustainability of MFIs in Ghanaian context.

This study therefore extends the prior study of the above to include other dimensions of sustainability such as environmental and regulation, expansion and growth to determine how the known key factors affect the sustainability of MFIs in Ghana.

III. METHODOLOGY

A. RESEARCH DESIGN

The study adopted the cross-sectional survey design to solicit information from Managers, Administrative and Operational staff of 36 Tier 2 microfinance companies. The study operationalizes microfinance institutions as those "Tier Two" MFIs with the word 'microfinance' as part of their names. The 36 companies were randomly selected from the list of Microfinance Companies from Western, Central, Ashanti, Greater Accra, Brong Ahafo and Eastern. These are the companies that are classified as tier two MFIs. The choice of the microfinance companies over the other informal

financial institutions is that they form a major part of the total informal financial companies in the country and also they are pivotal as far as credit for development is concerned (Chronicles Business News of Ghana, 2014 In addition, studying these institutions is important because in recent times alleged cases have been reported about their operations. The cross sectional survey design was employed to support the quantitative analytical procedure. This is appropriate as the study structure requires selection of microfinance institutions and administer data collection instrument. The survey is applied through the use of standardized questionnaires to collect the required data of interest (Anlo, 2012, p.79).

B. DATA

The study uses structured self-administered questionnaire for collecting responses from the managers, administrators and operational staff. The questionnaire sought to collect information on some aspects of sustainability dimensions of the microfinance sectors and how the components affect microfinance institutions. The questionnaires were hand delivered and collected in the same manner**.** To analyze the data, the study employs statistical tools such as exploratory factor analysis and t-test comparisons techniques. Exploratory factor analysis using the principal components analysis method with Varimax rotation were applied in order to remove redundant variables from the data (highly correlated) so as to be left with uncorrelated variables in order to retain acceptable factor structures where low factor loadings, cross-loadings and low communalities (0.5) were eliminated whilst the t-test was to find out if there is significant difference between sustainability indicators of MFIs .The t-test of significance was used to test the mean difference of selected indicators for sustainability of MFIs.

C. STUDY AREAS

The study was conducted in six regions of Ghana including Ashanti, Greater Accra, Brong Ahafo, Western, Central and Eastern Regions. The region with the highest number of Tier two MFIs is Greater Accra followed by Ashanti and the region with the least is Brong Ahafo. The motives are that Greater Accra and Ashanti seem to be the most developed regions in terms of economic activities whereas the Brong Ahafo region is subjugated by farming activities and can vaunt of a few MFIs. The institutions are regulated by Bank of Ghana and provide financial assistance to the masses especially the low income brackets. The samples of MFIs were taken from the regional capitals (Kumasi, Accra, Sunyani, Takoradi, Cape Coast and Koforidua) of each region. The aim is that MFIs are focused in the cities where business activities are booming.

D. SAMPLING APPROACH

The study uses multi-stage sampling technique. This sampling technique is applied in this study by first selecting the microfinance companies and finally the staff to respond to the questionnaires. The sample size is 331.This comprises of all the level managers, administrative and operational staffs. A total of 360 questionnaires were handed out. Out of this number, a total of 331 were returned representing 92% response rate and these valid responses were used for analysis. This sample size was deemed to be fairly representative to help arrive at a conclusion that could be acceptable. The results show that the sample is adequate for factor analysis and that variables correlate well. The study also follows Tabachnick and Fidell's (2007) formula for calculating minimum sample size. The formula is given as: $N > 50 + 8m$ (where 'N' = sample size and 'm' = number of dimensions) and m=4 that are the four extracted factors. Therefore per the formula, the minimum requirement is 82. However, the study used sample size of 331 which is far greater than the minimum requirement.

E. CHARACTERISTICS OF SELECTED MFIS

All the 36 randomly selected MFIs are members of tier two Microfinance Companies in Ghana. .Out of these 36 institutions selected for the study, ten (10) staff were selected from every institution with a total of Three Hundred and Thirty-One (331) respondents responded The population of this study consists of 344 licensed microfinance institutions operating across Ghana .The sampling frame comprises of all the top level managers, administrative and operational staffs. The regional distribution of the 36 MFIs randomly selected for the study were located in 6 regions namely; Greater Accra (17 MFIs), Ashanti (4 MFIs), Brong Ahafo (3 MFIs), Eastern (3 MFIs), Western (7 MFIs), and Central (2 MFIs). The participants were : (149 in Greater Accra, (45%,) (68 in Western,(21%), (30 in Eastern,(9%), (14 in Central, (4%), (40 in Ashanti (12%), and (30 in Brong Ahafo (BA)(9%)

These MFIs should be satisfied before obtaining operating license from the Bank of Ghana. Another common characteristic about the institutions is that they all operate a deposit in small sums from the informal sector on daily basis. In addition to deposit mobilization, the institutions mobilize funds from short-term savings, pay interest on deposits, and engage in on lending of loans. The structures they adopt are normally individual and group lending. The sources of capital for these institutions are internal and external.

F. MEASUREMENT OF VARIABLES

The objective of this study was to determine the sustainability of MFIs by components of the sustainability construct (financial, operational, expansion and growth and environment and regulatory sustainability) and subsequently examined the extent to which these components influenced the sustainability of microfinance institutions in Ghana. A critical evaluation of the main objective above shows four key study variables upon which the study is designed, namely, financial, operational, expansion and growth and environmental and regulatory sustainability. Therefore, in this context, sustainability represents the dependent variable whiles financial, operational; expansion and growth, and regulatory and environmental factors denote the independent variables.

Although, the literature review provides range of different indicators to measure sustainability of microfinance institutions, the study follows CIDA (1999) framework to

measure sustainability. This framework measures sustainability from 19 questions which cut across areas such as financial sustainability, expansion and growth, competitiveness, environment and regulatory and managerial sustainability. The use of this framework is influenced by its content and the international exposure. Since these questions are already validated internationally, it increases the validity and reliability of the data and hence the findings. This framework is applied by technically following Kahaso (2012). The author used a 5-point Likert scale to measure its variables

IV. RESULTS

Using exploratory factor analysis, all the forty three (43) variables measuring the level of sustainability of MFIs on the questionnaire were subjected to principal component analysis followed by a varimax rotation. Initial results presented showed that some variable/items had low extraction communalities (communalities below 0.5) whilst others had significant cross loadings. Therefore in line with recommendations by Hair et al (2016), the offending items were eliminated sequentially and EFA re-run until the final results obtained acceptable factor structure. The final results of the principal component analysis containing thirty six variable/items are presented in table 1. A Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy value of 0.775 as well as a Bartlett's Test of Sphericity of (approx. Chi-square=17787.32, df=630, p=0.000) were obtained. These results show that the sample is adequate for factor analysis and that variables correlate well.

Variable	Communality	Factor	Eigenvalue	% of Variance	Cumulative %
We have policy for attaining full self-sufficiency within a reasonable period	0.659	1	13.422	37.222	37.222
client profitability is relatively high	0.718	2	5.866	16.296	53.518
We are working to develop an efficient low cost credit methodology to control delinquency and rationalize costs	0.471	3	3.967	11.020	64.538
The microfinance has the needed financial resources to maintain the financial service programs	0.668	4	1.434	3.984	68.522
The credit funds to client at least maintained its value taking into account inflation and loan losses	0.704	5	1.38	3.835	72.357
Appropriate methods have been developed to make the services financially viable without external funds	0.598	6	1.219	3.387	75.744
Trade of exist between financial sustainability and the ability of the institution to reach the poorest of the poor	0.767	7	1.149	3.190	78.935
We are able to cover our operational cost	0.749				
We cover costs of maintain the value of equity	0.485				
The institution is committed to achieving operational efficiency	0.851				
There is high customer satisfaction	0.854				
The microfinance have sufficient technical financial and management capacity to continue with the financial services	0.664				
The microfinance enhances employees retention	0.808				
The microfinance enhances employee productivity	0.931				
We enhances employees passion toward social mission	0.915				
The internal control system of microfinance is reliable and able to prevent major crises and correct minor errors	0.848				
The institution is serious about ensuring that the credit program and overall financial services become self sufficient	0.793				
Clients will pay for access to microfinance services at rates which allow the service to be sustainable	0.828				
Our service delivery is demand driven and business –like	0.891				
The targeting is based on actual demand within the market not on preconceived ideas of what service the client want to access.	0.826				
The microfinance institution tracks its client base and receives feedback	0.918				
The financial services within the institution are designed and delivered in a manner that effectively reaches the intended clients	0.873				
We serve the right target groups	0.901				
The number of customer we serve keep on increasing	0.893				
The microfinance institution is steadily growing in its outreach	0.847				
The microfinance has influence within the community	0.818				
The microfinance institution has the capacity to expand further	0.796				
The service of the micro finance will continue to be relevant to the clients	0.849				
The microfinance institution faces increasing demand	0.851				
The microfinance institution is competitive and client driven to secure its market position	0.843				
The volume of credit offered to the customers of the microfinance institution are increasing	0.851				
There are policies and procedures in place enabling the microfinance institution to expand its outreach product line client base, or other targeted result?	0.810				
The enabling environment enhances the development of the microfinance institution or financial services	0.815				
The microfinance institution legal structure does not place restrictions on the ability of the institution to undertake various financial services including outreach programs	0.855				
The external environment does not impact microfinance option and effectiveness	0.879				

The microfinance institution is able to operate effectively under current policies and regulation	0.589

KMO=0.775; Barletts Test Chi-square=17787.32, df=630, p=0.000; Total variance explained=78.9%

Source: Field data, (2016)

Table 1: Level of Sustainability of MFIs- Principal Component Analysis

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
The microfinance enhances employee productivity	0.908						
The internal control system of microfinance is reliable and able to prevent major crises and correct minor errors	0.858						
The microfinance enhances employees retention	0.855						
Our service delivery is demand driven and business –like	0.855						
There is high customer satisfaction	0.84						
Clients will pay for access to microfinance services at rates which allow the service to be sustainable	0.814						
The institution is committed to achieving operational efficiency	0.808						
We enhances employees passion toward social mission	0.783						
The external environment does not impact microfinance option and effectiveness	0.782						
The targeting is based on actual demand within the market not on preconceived ideas of what service the client want to access.	0.766						
The institution is serious about ensuring that the credit program and overall financial services become self sufficient	0.755						
The microfinance have sufficient technical financial and management capacity to continue with the financial services	0.753						
The credit funds to client at least maintained its value taking into account inflation and loan losses	0.704						
The financial services within the institution are designed and delivered in a manner that effectively reaches the intended clients	0.645						
The microfinance institution legal structure does not place restrictions on the ability of the institution to undertake various financial services including outreach programs	0.641						
We cover costs of maintaining the value of equity	0.602						
The service of the micro finance will continue to be relevant to the clients	0.897						
The microfinance institution is competitive and client driven to secure its market position	0.896						
The microfinance institution faces increasing demand	0.874						
The microfinance has influence within the community	0.868						
The microfinance institution is steadily growing in its outreach	0.846						
The microfinance institution has the capacity to expand further	0.811						
The number of customer we serve keep on increasing	0.801						
The volume of credit offered to the customers of the microfinance institution are increasing	0.791						
The enabling environment enhances the development of the microfinance institution or financial services	0.753						
There are policies and procedures in place enabling the microfinance institution to expand its outreach product line client base, or other targeted result?	0.662						
The microfinance institution tracks its client base and receives feedback		0.744					
The microfinance institution is able to operate effectively under current policies and regulation		0.713					
Appropriate methods have been developed to make the services financially viable without external funds		0.692					
We serve the right target groups		0.531					
The microfinance has the needed financial resources to maintain the financial service programs			0.785				
We are able to cover our operational cost			0.68				
Trade of exist between financial sustainability and the ability of the institution to reach the poorest of the poor				0.825			
Client profitability is relatively high					0.837		
We have policy for attaining full self-sufficiency within a reasonable period							0.762
We are working to develop an efficient low cost credit methodology to control delinquency and rationalize costs							0.507

Source: Field data, (2016)

Table 2: Level of Sustainability of MFIs: Varimax Rotated Component Matrix

The analysis produced seven (7) factors shown in table 2. For the purpose of this study, only factors with loadings higher than 0.5 were considered. The seven extracted factors accounted for 78.9% of the total variance explained. Internal reliabilities of the extracted factors was performed in the form of Cronbach's coefficient alpha (α) and shown in table 3. For the purpose of this study, the cut off value adopted was 0.6 (Hair et al., 2016) and the acceptable benchmark value of

item-to-total correlation was set above 0.3 (Narteh et. al. 2014; Hair et al., 2016.

The internal consistency and weighted means of the four remaining factors were computed and shown in table 3. Factor 1 contains sixteen items and relates to issues concerning "Operational Sustainability". Factor 2 is made up of ten items and relates to issues concerning "Expansion and Growth Sustainability". Factor 3 contains four items and relates to issues concerning "Environment and Regulatory Sustainability". Factor 4 contains four items and relates to issues concerning "Financial Sustainability"). Due to conceptual fitness purposes, the researcher decided to merge the fifth and six factors with fourth factor; whereas the seventh factor was eliminated due to low reliability.

Factors and Items	Number of items	Item-total correlation	Weighted Mean	α value
Factor 1 (Operational Sustainability)				
The microfinance enhances employee productivity	16	0.899	3.01	0.961
The internal control system of microfinance is reliable and able to prevent major crises and correct minor errors		0.837		
The microfinance enhances employees retention		0.837		
Our service delivery is demand driven and business –like		0.874		
There is high customer satisfaction		0.841		
Clients will pay for access to microfinance services at rates which allow the service to be sustainable		0.798		
The institution is committed to achieving operational efficiency		0.83		
We enhances employees passion toward social mission		0.681		
The external environment does not impact microfinance option and effectiveness		0.784		
The targeting is based on actual demand within the market not on preconceived ideas of what service the client want to access.		0.799		
The institution is serious about ensuring that the credit program and overall financial services become self sufficient		0.742		
The microfinance have sufficient technical financial and management capacity to continue with the financial services		0.741		
The credit funds to client at least maintained its value taking into account inflation and loan losses		0.63		
The financial services within the institution are designed and delivered in a manner that effectively reaches the intended clients		0.731		
The microfinance institution legal structure does not place restrictions on the ability of the institution to undertake various financial services including outreach programs		0.671		
We cover costs of maintaining the value of equity		0.507		
Factor 2 (Expansion & Growth Sustainability)				
The service of the micro finance will continue to be relevant to the clients	10	0.888	3.910	0.956
The microfinance institution is competitive and client driven to secure its market position		0.836		
The microfinance institution faces increasing demand		0.808		
The microfinance has influence within the community		0.812		
The microfinance institution is steadily growing in its outreach		0.861		
The microfinance institution has the capacity to expand further		0.763		
The number of customer we serve keep on increasing		0.868		
The volume of credit offered to the customers of the microfinance institution are increasing		0.74		
The enabling environment enhances the development of the microfinance institution or financial services		0.801		
There are policies and procedures in place enabling the microfinance institution to expand its outreach product line client base, or other targeted result?		0.701		
Factor 3 (Environment & Regulatory Sustainability)				
The microfinance institution tracks its client base and receives feedback	4	0.748	3.180	0.777
The microfinance institution is able to operate effectively under current policies and regulation		0.546		
Appropriate methods have been developed to make the services financially viable without external funds		0.375		
We serve the right target groups		0.675		
Factor 4 (Financial Sustainability)				
The microfinance has the needed financial resources to maintain the financial service programs	4	0.427	2.308	0.616
We are able to cover our operational cost		0.435		
Trade of exist between financial sustainability and the ability of the institution to reach the poorest of the poor		0.383		
Client profitability is		0.353		

relatively high			
Factor 5			
Trade of exist between financial sustainability and the ability of the institution to reach the poorest of the poor	_	1.000	
Factor 6			
Client profitability is relatively high	_	1.000	
Factor 7			
We have policy for attaining full self-sufficiency within a reasonable period	0.127	-	
We are working to develop an efficient low cost credit methodology to control delinquency and rationalize costs	0.127	-	0.225

Source: Field data, (2016)

Table 3: Level of sustainability of MFIs-Internal consistency of final revised structure

In order to examine extent of importance of the four extracted factors, in line with Hogg et al. (1996), t-tests for paired samples was performed and shown in table 5 below

Pairs	Means	Std. Deviations	T	(2-tailed) Sig.
opsustain - expansionGrowth	3.000-3.910	0.571-0.454	28.754	0.000
opsustain - mktRegulatory	3.000-3.180	0.571-0.672	3.960	0.000
opsustain - financialSus	3.000-2.308	0.571-0.382	19.379	0.000
expansionGrowth – mktRegulatory	3.910-3.180	0.454-0.672	19.628	0.000
expansionGrowth - financialSus	3.910-2.308	0.454-0.382	50.087	0.000
mktRegulatory – financialSus	3.180-2.308	0.672-0.382	18.309	0.000

Note: sig. = $p < 0.05$;

Table 5: Comparisons of Factors

V. DISCUSSION

A. LEVEL OF SUSTAINABILITY OF MICROFINANCE INSTITUTION IN GHANA

The level of sustainability is the substantive objective of the study. Sustainability was operationalized into four dimensions, namely, financial sustainability, operational sustainability, expansion and growth and environment and regulatory sustainability. The purpose of this objective was to determine the level of sustainability of microfinance institutions in Ghana. To achieve this result, exploratory factor analysis was used to extract the major sustainability dimensions.

Through the analysis, it was revealed that the sustainability analysis produced seven (7) factors but only four factors were retained namely, Operational Sustainability, Expansion and Growth Sustainability, Environment and Regulatory Sustainability and Financial Sustainability.

The dimension with the highest weighted mean value was Expansion and Growth Sustainability with weighted mean value of 3.910. The dimension with the second highest weighted mean value was Environment and Regulatory Sustainability with weighted mean value of 3.180. The dimension with the least and lowest weighted mean value were operational and Financial Sustainability with weighted mean value of 3.01 and 2.308 respectively.

The study found that the most significant factor for sustainability of MFIs in Ghana is expansion and growth sustainability. This is followed by environment and regulatory sustainability, operational sustainability and financial sustainability respectively. The results imply that the key factors for sustainability of MFIs in Ghana include Operational Sustainability, Expansion and Growth Sustainability, Environment and Regulatory Sustainability and Financial Sustainability.

Operational sustainability is considered as one of the most important sustainability variable. The risk associated with operations of financial institutions including microfinance institutions requires effective and sustainable operational strategy. According to Goldberg and Palladini (2010), the result of recent crisis and experiences make the development of strong managerial and operational strategy in understanding the importance of anticipating unexpected events through control system, technical capacity and retentions. The study therefore sought to investigate the level of the operational sustainability of these financial institutions.

The results revealed that in the opinion of the participants of the survey, the level of operational sustainability was the second least among all the other indicators. This means that on the average the two primary sustainability indicators (financial and operational sustainability) had the least weighted mean value. Opinions are generally subjective variables and thus, respondents would not be able to accurately assign statistics to them. However, there is certainty in terms of the scores of ranking them with other sustainability indicators rated with same opinions. Thus, even though, one cannot be certain whether or not the scores reflect reality, there is some high degree of assurance that operational sustainability ranking the second least is reflective.

The results though similar to that of Owusu (2011), the score on the scale was inconsistent with Owusu. Owusu revealed some of the key components such as staffing, technical capacity; training and controls were below desired. All these components featured in the operational sustainability indicators used in this study. However, the study failed to conclude that the level of operational sustainability was below desired. The concerned revealed in the present study was that the operational sustainability was the second least in relation to the other components of sustainability.

The study again disaffirms the results of Ruzibuka (2005) indicated that microfinance institutions lack formal operational and managerial capacities and capabilities to continually support, upgrading and meet the emerging turbulent trends in microfinance operations. According to Ruzibuka, MFIs do not have the ability to develop and sustain credit programs to support their operations. Contrary to these

findings from the study of Ruzibuka, the present study saw reasonable level of operational sustainability measured by factors including sustainable credit program, managerial capacity and technical capabilities. Thus, although in relation to other sustainability, the operational sustainability was the second least, there was reasonable assurance that the level is not very low as portrayed by Ruzibuka

With respect to the financial sustainability, the results showed that the microfinance institutions surveyed had relative financial stability. Therefore, in the simplest term, the participants of the survey believed that their institutions level of financial sustainability is relatively normal. However, it was evident that this was the lowest performed sustainability indicator of the institutions used.

Another sustainability variable assessed was expansion and growth sustainability. The results in the Table 3 showed that the respondents rated the level of expansion and growth sustainability as the highest sustainability indicators. This means that the respondents believed that their respective microfinance institutions have the ability to sustain their expansion and growth potentials. This further showed that the participants believed that the microfinance institutions keep building their customer base, steadily grow their outreach, they continue to influence their operational communities, increasing continuous demand of services, increasing credit facilities, and possess effective expansion policy on outreach, clients targets and product/service development. These were the parameters used to estimate the level of expansion and growth sustainability.

The high level of expansion and growth sustainability indicates market opportunities available for microfinance businesses. The target groups and market are often the low income categories which are often neglected or underserved by the mainstream banking making them continuously rely on these microfinance institutions (Schreiner & Colombet, 2001). The expansion and growth sustainability potentials of microfinance business was affirmed and echoed also in the study of Guntz (2011). Therefore, it is not surprising that the expansion and growth sustainability was highest. The results thus meet study expectations and theory of intuition. The results confirm the assertion by Martzys (2006). Martzys revealed that microfinance institutions grow more rapidly than public commercial banking services because MFIs are established to resolve the credit access problem of the poor, low income level and middle income level that are in majority.

According to CGAP (2011), the results of their survey showed that 78 percent of the participated microfinance institutions reported a strong strategy exist to continually increase their outreach to small enterprises while 70 percent also have strategy to expand their credit portfolio for these small enterprises. These findings are similar to the findings in this study using exploratory factor analysis as the bottom line of their results are that microfinance institutions have strategy for sustaining expansion and growth as evident in the present study. This means that microfinance institutions in Ghana are motivated to continually increase and serve the growing number of their customers through their micro-credits.

The last sustainability variable used in this study was environment and regulatory sustainability. The study sought to estimate the level of relatively stable favorable operation environment, sustainability development of the microfinance business, continuous support from governments in terms of policy and framework, institution tracks its client base and receives feedback, institution is able to operate effectively under current policies and regulation, level of legal recognition of operations of microfinance operation, stability of regulations including the absence of regular changes in laws, sustainable flexible legal structure for microfinance operation, legal and environmental friendliness to outreach program. The study included these indicators in assessing the level of environmental and regulatory sustainability.

The respondents believed that microfinance institutions in Ghana operate under sustainable environment and regulations. This implies that on the average the operational environment including government policies and regulations and laws from the regulator support the sustainability of microfinance business. The results from table 3 displayed that this component of sustainability was the second highest as ranked by the participants. The findings do not meet the study expectation. Given, the continuous and frequent directives from Bank of Ghana, the study expected the regulatory sustainability to be low. However, it is possible that the respondents believed that such directives are beneficial for the going concern of their institutions.

The findings confirm the results from Bernaskso (2011) asserted that the standardization of microfinance operations through standing laws in Ghana have created sanity in the business of microfinance boosting the customer's confidence. This suggests that the high level of environmental and regulatory sustainability breeds safety and minimize risk associated with microfinance operation from the perspective of both providers and the customers. Laws regulating microfinance institutions are not based on a mere decree or pronouncement but go through rigorous review by parliament making the sustainability sounding.

Although the licensed companies sometimes fold up, the frequency is relatively low compared to unlicensed. It is also easier to trace assets of licensed microfinance institutions to compensate customers for eventualities than the unlicensed making regulatory sustainability a critical component of sustainability. For instance, the recent scandal from 'DKM and Gods is Love', although it is a terrible occurrence, Bank of Ghana and the authorities have intervened to liquidate their assets to compensate the customers.

B. THE EXTENT OF FOUR EXTRACTED FACTORS ON SUSTAINABILITY OF MICROFINANCE INSTITUTIONS

This section discusses the findings of the results of the second objective of the study. The objective sought to examine the extent of *four extracted factors* influencing the sustainability of microfinance institutions in Ghana. In order to examine extent of impact of the four extracted factors, in line with Hogg et al. (1996), t-tests for paired samples was performed and shown in table 5. . The results show all six criteria examined are statistically significant. Based on these results, one can derive the following in descending order of importance regarding the extent of influence of factors on overall sustainability of MFIs.

- ✓ Expansion and Growth Sustainability
- ✓ Regulatory and Environment Sustainability
- ✓ Operational Sustainability
- ✓ Financial Sustainability

The findings from the results indicated that all four extracted dimensions had positive impact on sustainability. Comparatively, Expansion and Growth Sustainability is the most significant positive impact on sustainability. This is followed by Regulatory and Environment Sustainability and the least positive impact is Financial Sustainability. The results re-affirmed the results obtained by using exploratory factor analysis.

This implies that when microfinance institutions improve its financial, expansions and growth, operational and regulatory and environment indicators/measures as used in this study "all things being equal" sustainability of MFIs would be enhanced.

In conclusion, the analysis deduced four (4) key drivers (determinants) of sustainability of microfinance institutions including operational sustainability, expansion sustainability, regulatory sustainability and financial sustainability.

VI. CONCLUSIONS AND RECOMMENDATIONS

This study examined the determinants of sustainability of microfinance institutions in Ghana. The study has conceptualized sustainability from four key components such as financial sustainability, operational sustainability, expansion and growth and environment and regulatory sustainability. It is concluded that among the sustainability variables, expansion and growth sustainability was the highest level of sustainability exhibited by the microfinance institutions followed by environment and regulatory sustainability, operational sustainability and financial sustainability respectively using exploratory factor analysis.

In a similar vein, financial sustainability, expansion and growth sustainability and environment and regulation sustainability had a statistically significant positive impact on sustainability of microfinance as exhibited in table 5

In Ghanaian context, financial sustainability is limited to providing serving relative few poor and therefore it is recommended that the microfinance institutions should require international partners to boost their financial viability. With regards to the funding, it is recommended that management should seek external funding to support operations and capacity in order to develop comprehensive and coherent training for employees taking into account their respective roles and responsibilities as well as their needs. These would not only minimise the challenge but could also beef the operational sustainability. In addition, management of microfinance institutions should focus on strengthening financial sustainability in order to reduce the overdependence on customers' deposits which often threaten survival especially in case of panic withdrawal to ensure survival and growth in the future through it had significant positive influence on its sustainability but it was the least among them.

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