RESEARCH ARTICLE

An Evaluation of How Institutional Characteristics, Agency Cost, Business Strategy and Governance affect Sustainability of Microfinance Institutions in Ghana

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Abstract

The research aims to establish the relationship between the sustainability of microfinance institutions and the factors that affect it. A model was proposed that seeks to offer an explanation of sustainability of Microfinance Institutions (MFIs) in Ghana. The proposed model identified four categories being: institutional characteristics, agency costs, business strategy and environment/governance with the microfinance institutions identified as Financial Non-Governmental Organizations, Rural Banks, Credit Union Associations, Savings and Loans Companies and Susu institutions. The research study analyzed the sustainability of microfinance institutions by an initial exploratory study piloted on 14 executive directors in qualitative interviews and 116 executive Directors in research questionnaires using both qualitative and quantitative techniques. The results of the study established positive relationships between sustainability and two out of the four factors namely; business strategy and environment/ governance, implying that the strength of the factors that affect the long term survival of microfinance institutions in Ghana are not the same, they differ in terms of their impact. Therefore, managers and policy makers should pay more attention to these identified factors if they are to survive long into the future and continue to play the critical role for which they were set up.

Keywords *Agency costs, Microfinance, Moral hazard Sustainability, Subsidy.*

Introduction

Since the early 1990's a consensus has emerged among governments and donors that microfinance institutions constitute an effective weapon for poverty alleviation. For this purpose, microfinance institutions have been set up in many countries to play the intermediary role between the suppliers of funds and the poor. The key objective of these institutions as required by the donors is poverty eradication by providing financial services to as many poor people as possible. However, considering that donor resources are not unlimited, the need has arisen for the microfinance institutions to be financially independent (sustainable). The challenge facing them is how to lend to a significant number of the poor without compromising the need to be viable and sustainable financial institutions. More importantly, sustainability of MFIs depends to a large extent on how they are able to manage their institutional characteristics, agency costs, business strategy and environment/governance factors [1].

The main objective of the research is to develop an explanatory framework that will lead to a better understanding of the sustainability of microfinance institutions by examining the influence of factors internal and external in Less Developed Countries (LDCs), especially Sub-Sahara Africa by using data from Ghana. There are two main gaps in the literature that this study aims to address. The first is that most of the empirical works on sustainability of microfinance have been in the South American and Asian countries. Very few studies have tested the sustainability of such institutions in Ghana. Again, most of the studies have been in the area of impact analysis.

Secondly, these studies have tended to concentrate on the operations and coverage of microfinance institutions and informal money lenders with little focus on their sustainability. As mentioned earlier, this research will address the issue of imposition of sustainability of microfinance theories of the Latin American and Eastern European economies where the movement first began. It therefore intends to add

to the limited number of research works carried out in Sub-Saharan Africa. Again, this study will help give a new perspective on the factors that affect sustainability of microfinance institutions and provide additional evidence that prove or disprove the existing evidences. The principal issues being raised have to do with sustainability and how these translate into the ability of MFIs to operate successfully. From a managerial and accounting contribution viewpoint, this research is important for a number of reasons. Understanding sustainability is important to the microfinance sector in that it provides them with greater understanding of the variables that need to be skillfully manipulated in order to establish viable and enduring institutions.

Literature Review

Policy makers throughout the world have actively tried to improve financial markets in poor regions, but often with disappointing results mainly due to mismanagement of resources and interest rate restrictions by state-owned development banks. Again the traditional banks and other financial institutions have systematically kept low-income households outside their credit delivery networks, forcing them to resort to informal and non-conventional systems of mobilizing credit. Against this background, microfinance emerged as a promising way to rethink banking for the poor [2].

A substantial amount of empirical works on sustainability of microfinance have been in the South American and Asian countries [3,4]. Two important indicators have emerged in examining the sustainability of MFIs. Yaron [5] in a study of rural finance institutions which engage in microcredit activities in Indonesia and Bangladesh used these two criteria to measure sustainability:

Financial Self-Sustainability

Substantial Outreach

Financial self-sustainability is attained when return on equity (ROE), net of subsidy received, equals or exceeds the opportunity cost of funds. In this regard a positive on-lending interest rate, which is able to cover administrative costs and maintains the value of equity in real terms, is advocated.

Again, high loan collection rates as well as a high deposit rate to increase voluntary savings and proper management of administrative costs with efficient loan processing are factors outlined under financial self-sustainability. On measures of outreach, Yaron [5] examined the value of loans and savings extended, the type of financial services offered, the number of branches, percentage of poor served, real annual growth rate and participation of women.

Hulme and Mosley [6] in their study of 13 MFIs in seven countries used real interest rate charged, six-month arrears rate, frequency of loan collection, availability of voluntary savings facilities and availability of incentives to repay to determine the financial sustainability. Thus, lower arrears rate, high frequency in loan collection, the existence of material incentives to borrowers and staff of the institutions maximized the repayment rate. The study concluded that financially viable microfinance institutions are able to impact incomes of beneficiaries significantly.

Zeller [7] have generally agreed to most or all of these measures outlined under the two criteria as being very effective in determining the sustainability or otherwise of MFIs. In this regard, four microfinance institutions, Bank for Agriculture and Agricultural Cooperative (BAAC) in Thailand, Badan Kredit Kecamatan (BKK) and Bank Rakyat Indonesia Unit Desa (BUD) both in Indonesia and Grameen Bank (BK) in Bangladesh were classified as very successful in the early 1990s. An important phenomenon that characterized these institutions is group lending. In group borrowing, the costly job of screening, monitoring and enforcement of repayment is transferred largely from the MFI to the group members.

There is also varied evidence [4] on measures of dealing with the problems of moral hazard and adverse selection to ensure sustainability of microfinance operations. Since groups internalize the costs of acquiring and generating information, they must be encouraged to tap lenders' resources. This arrangement results in what refers to as "peer monitoring" where according to him.

"Peer monitoring is largely responsible for the successful financial performance of the Grameen Bank of Bangladesh and of similar group lending programmes elsewhere".

Basu [8] also argues for group borrowing since it increases access of poor farmers to institutional credit by increasing the size of entitlement set, thereby removing problems of economies of scale.

Institutional development, that is engaging in activities that on the surface are not directly linked to the first duty of credit allocation such as training of clients in entrepreneurial development skills and social development have also been found to make MFIs sustainable. Groups are also obliged to contribute to an emergency fund to help members in times of emergency. Grameen Bank and other MFIs that were deemed as being successful were seen to have engaged in such activities.

The sustainability of Grameen Bank and of MFIs in general lies in the adoption of such policies which he terms "strategic credit policies". In addition, the motivation of employees as well as policies to forestall the flouting of organizational norms by powerful clients is also important. In all of these, the loan recovery rates were noted to be very impressive, 98% for Grameen and Bangladesh Rural Advancement Committee (BRAC) and 100% for others such as Association for Social Advancement (ASA) (Sharma et al., 1997). Authors such as Khandker and Khan [3], Schreiner and Yaron [5] have further gone ahead to define economic sustainability and institutional viability as means of measuring the viability of MFIs.

According to Zeller and Meyer [7], there is a critical triangle in achieving economic sustainability of microfinance. The analytical framework points to the wide set of potential trade-offs and synergies that needs to be understood by policymakers, microfinance practitioners and researchers alike. The framework represents the many types of institutional innovations that contribute to improving financial sustainability (such as employment of cost-reducing information systems), impact (such as designing demand-oriented services for the poor and more effective training of clients), or outreach to the poor (such as more effective targeting mechanisms or introducing lending technologies that attract a particular group of clients). Innovations at the institutional level and improvements in the policy environment contribute to improving the overall performance of financial institutions.

According to Zeller and Meyer [7], it is commonly believed that further institutional innovation and microfinance expansion will continue to rely on public intervention and financial support. In fact most of MFIs that reach large numbers of female and male clients below the poverty line require state or donor transfers to subsidize their costs. They further stressed that the most successful MFIs that have achieved financial sustainability have required investments by the state or donors in the past. Such public investments are justified

from a public policy perspective only if the discounted social benefits of public investment in microfinance are expected to outweigh the social costs. These costs include the opportunity costs of forgoing the benefits of other public investments, such as primary education, when scarce government or donor funds are used for microfinance [7]. The subsidy dependence index has become a widely accepted operational measure to quantify the amount of social costs involved in supporting the operations of a financial institution.

Following from the literature review, the main research question is: What are the significant factors that affect the sustainability of microfinance institutions in Ghana? An answer to this question requires an investigation into factors that are perceived to impact on the performance of microfinance institutions and the development of sub-research questions. The factors that impact on sustainability of microfinance institutions derived from the literature review are grouped as follows: Institutional Characteristics, Agency costs, Business strategy, Environment/Governance. The sub-research questions have been developed under their various sub-headings which are outlined with their corresponding hypotheses. These hypotheses are further explored and justified with a concept model. (Fig. 1)

Q.1) Which are the major institutional characteristics that impact on sustainability of microfinance institutions?

This specific question investigates how major characteristics of the microfinance institution such as ownership, geographical spread, motivation, clientele type, funding and methods of gathering information impact on an institution's drive to become sustainable. This question is investigated through the hypotheses 1a, 1b, 1c, 1d, 1e, and1f.

Q2) What are the issues of sustainability and agency costs that impact significantly on an MFI?

Question two, which relates to hypotheses 2a, 2b, 2c, 2d, and 2e examines which of the various factors has the most impact on sustainability of MFI: sources of income, subsidy dependence, number of branches and lender-borrower relationship,

Q3) Which of the business strategies adopted has a significant influence on sustainability of microfinance institution?
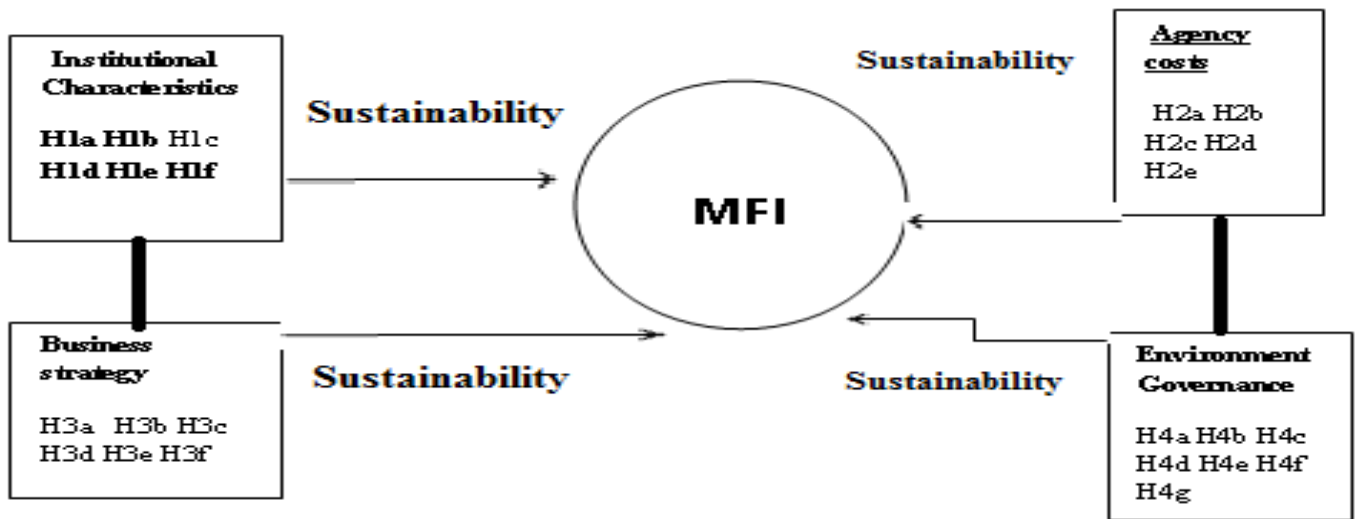
Fig. 1: Conceptual sustainability model

Question 3 examines which of the various business strategies has the most impact on sustainability of an MFI. This is examined through hypotheses 3a, 3b, 3c, 3d, 3e and 3f: effective screening, group collateral, clients meetings, methods of minimizing default rates, peer monitoring and innovation in financial products.

Q4) Which environmental/ governance factors have the most impact on sustainability of an MFI?

Question 4 considers the impact of environmental and governance issues on sustainability of an MFI. This is examined in hypotheses 4a, 4b, 4c, 4d, 4e, 4f and 4g: emergency loans, job creation, competition, Board of Directors, quality of staff, loan recovery and regulatory framework.

This research will be in seven (7) parts; introduction, literature review methodology, results/findings, discussions and policy implications, conclusions and limitations.

The research starts with the introduction to the study and the justification of the research. The next section looks at existing literature on sustainability of microfinance. This is followed by the research design and methodology used in the empirical research and the reason for the choice of methods. The next part is the findings of the research. The research ends with implications and policy recommendations.

Research Methodology

The research was based on both the qualitative and quantitative approaches. A two stage approach was used. First, an exploratory qualitative interview was conducted by interviewing 14 executives of sampled microfinance institutions. This was followed by a self-administered survey involving 116 microfinance institutions.

Data for this study is collected from two sources; the financial reports (secondary) and structured questionnaires and interviews (primary) to elicit information on modes of handling the sustainability variables.

The sampling frame included managing directors/ financial managers from microfinance institutions in seven out of the ten regions of Ghana; Greater Accra, Eastern, Central, Western, Ashanti, Northern and Volta regions.

The stratum development began by assessing the regional distribution. From there the microfinance institutions located in the regions were determined. The next stage involved the aggregation of coverage by examining the regions with the high number of MFIs hence the selection of Greater Accra, Central, Western, Eastern, Ashanti, Northern and Volta regions gave 130 MFIs, representing 74.4%.

Face to face interview method was mostly used.

A two-stage approach was used in analyzing the data for the study. The first stage was where sustainability was measured at the nominal level which led to the use of the logistic regression and the chi-square test. Cronbach's Alpha was found to be within acceptable limit of .721.

Table 1: Sample frame analysis

Institution	Qualitative interview number of executives	Survey	Total
Financial NGO	5	84	89
Savings & Loans Co.	3	9	12
Credit Union Assoc.	2	3	5
Rural Banks	2	18	20
Susu Companies	2	2	4
Total	14	116	130

Table 2: Type of MFI ownership and sustainability of MFI

Type of MFI ownership	Sustainability of MFI		Total
	Yes	No	
Local	26 (24.5%)	3 (37.5%)	29 (25.4%)
Foreign	63 (59.4%)	4 (50.0%)	67 (58.8%)
Both	17 (16.0%)	1 (12.5%)	18 (15.8%)
Total	106 (100%)	8 (100%)	114 (100%)

$X^2=0.664$, df=2, p=0.718

Results

Hypotheses Testing on Impact of Institutional Characteristics on Sustainability of MFI

For the purpose of detailed analysis, institutional characteristics were decomposed into six major factors namely ownership, geographical spread, and motivation of the MFI, clientele type, alternative funding and quality of information gathering. As a result of this, six hypotheses were postulated and tested. Detailed outcomes of all the 24 hypotheses are summarized in Table 6.

Type of Ownership and Sustainability of MFI's

The type of ownership of MFI's may impact on their sustainability in diverse ways, but more positively especially where the ownership is foreign and from a developed rather than from a developing country. The foreign owned MFI's may bring to bear the benefits of highly skilled personnel, access to and regular inflow of large capital, technology, among others compared to a wholly owned local MFI. It was therefore hypothesized that:

H (1a) If the ownership of a microfinance institution in sub-Saharan Africa is foreign, then sustainability factors will significantly increase. (Table 3).

Table 3: Motivation to grow and empower the poor and sustainability of MFI

Motivation for setting up MFI	Sustainability of MFI		Total
	Yes	No	
Business development	16 (15.1%)	-	16 (14.0%)
Poverty alleviation	54 (50.9%)	-	54 (47.4%)
To help women	24 (22.6%)	8 (100%)	32 (28.1%)
Provide training in SME	12 (11.3%)	-	12 (10.5%)
Total	106 (100%)	8 (100%)	114 (100%)

$X^2=22.05$, df=3, p=0.05

The results showed no significant ($X^2=0.664$, df=2, p>0.05) relationship between type of MFI ownership and sustainability. It was observed that more MFI's that were foreign owned (59.4%) were more likely to remain in business than their counterparts that were locally owned (24.5%). In contrast, among the MFIs that were not likely to remain in business, 50.0% were foreign owned whilst 37.5% were locally owned. In effect, sustainability of the MFIs was not significantly dependent on the type of ownership. Therefore at the 0.05 level, the hypothesis that if the ownership of a microfinance institution in sub-Saharan Africa is foreign, then sustainability will significantly increase was not supported.

Increased Lending by MFI's and Sustainability

The impact of increased lending by the MFI on the sustainability and success was also investigated. Increased lending was used as a measure of the MFIs ability to boost their income. In line with this it was hypothesized that:

H (1b): If microfinance institutions commit more funds to lending then sustainability factors will significantly increase.

The tests result revealed no significant relationship between the propensity to commit more funds to lending and the sustainability of

the MFI (X^2 = 1.631, df = 1, p> 0.05). Therefore at 95% significance level, *the hypothesis that if microfinance institutions commit more funds to lending then sustainability factors will significantly increase was not supported.*

Motivation of the MFI's and Sustainability

The fundamental principle underlying the establishment of microfinance is poverty alleviation and economic empowerment through the provision of small loans especially among rural dwellers. The study therefore investigated the reason for establishing the MFI's and it was hypothesized that:

H (1c): If the motivation of the MFI is to grow and empower the poor is high then sustainability will significantly increase.

The results in Table 3 show the relationship between the motivation of the MFI to grow and empower the poor and the sustainability of the MFI (Table 4).

Table 4: Test results of regression model for relationship between performance and its factors

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	111.505ᵃ	.335	.447

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

The chi-square test yielded X^2 =22.05, df=3, p<0.05, meaning that there was a significant relationship between the motivation of the MFI to grow and empower the poor and the sustainability of the MFI. Thus, those MFI's who were motivated to grow and empower the poor were not likely to collapse. Therefore at the 0.05 level, *the hypothesis that if the motivation of the MFI is to grow and empower the poor is high then sustainability activities will significantly increase was supported.*

Clientele Type and Sustainability of MFI's

The sustainability and success of MFI's to some extent depends on the ability of the clients to pay back their loans. As a result MFI's prefer clients whose economic activities were less risky and predictable. It is therefore not surprising that the majority of MFI's is pro-urban rather than pro-rural; and also prefer urban traders to clients (such as farmers) whose economic activities are unpredictable and depended on natural environmental or weather conditions. It was therefore hypothesized that:

H (1d): If MFI's lending to traders is high then sustainability factors will significantly increase.

A cursory look at the results also shows that traders were the dominant clientele of the MFIs. The test results revealed that sustainability was significantly (X^2=21.12, df=7, p=0.012) tied to the clientele type (specifically traders). Therefore at the 95% significance level, *the hypothesis that if MFI's lending to urban traders is high then sustainability factors will significantly increase was supported.*

Alternative Source of Finance and Sustainability of MFIs

In developing countries, access to capital and funding for business operation has long remained a crucial factor to the performance and sustainability of businesses. And for an MFI, access to large capital base, will obviously impact positively on the level and depth of outreach. In line with this it was hypothesized that:

H (1e): If MFI's have access to alternative source of finance, then their sustainability will significantly increase.

The test results revealed that sustainability of MFI was not significantly dependent on access to alternative sources of finance (X^2=2.94, df=1, p=0.087). Thus, at the 95% significant level, *the hypothesis that if funding of MFI's increase, then their sustainability will significantly increase was not supported.*

Information Gathering and Sustainability of MFI's

The quality of information gathered by MFI's on their clientele help in determining borrower characteristics, risk projection, loan monitoring and verification of the level of returns on credit facilities granted to the clients. The information gathering processes and verification procedures of MFI's are therefore very crucial since it is the first and main source of contact between the MFI's and their clients. In line with this, it was hypothesized that:

H (1f) If MFI's obtain enough information about their clients, then sustainability factors will increase.

The test results revealed that sustainability was significantly dependent on adequacy of client's information (X^2 =30.63, df=2, p=0.000). Therefore at the 95% significance level, *the hypothesis that if MFI's obtain enough information about their clients, then sustainability factors will increase was supported.*

Hypotheses Testing on Impact of Agency Cost on Sustainability of MFI

In an attempt to understand accurately how agency cost influence the sustainability of the MFI's, the question posed was; which agency cost factors impact significantly on the sustainability of MFI's. In an attempt to answer this question five hypotheses (H2a, H2b, H2c, H2d and H2e) were postulated and tested. The construct for agency cost were alternative sources of income, subsidy dependence, number of branches, contractual agreements and lender-borrower relationship.

Alternative Sources of Income and Sustainability of MFIs

Critical to the sustainability of any organization is its ability to raise enough revenue to support its activities. It was therefore hypothesized that: "*If sources of income for MFI's increase, then their sustainability will also increase*".

Though the sustainability of the MFIs was found to be significantly dependent on the availability of alternative sources of finance apart from on-lending interest (X^2=2.94, df=1 and p>0.05) this result was contrary to what was expected. Thus, sustainability was not necessarily dependent on access to alternative sources of income by engaging in other income activities. Therefore, at the 95% significance level, *the hypothesis that if the sources of income for MFIs increase then their sustainability will also increase was not supported.*

Subsidy Dependence and Sustainability of MFIs

The microfinance movement continues to take advantage of subsidies from donors and governments; meaning MFIs are largely dependent on subsidy. In line with this it was hypothesized that "*If subsidy dependence among MFI's is high then their sustainability will also increase*".

Clearly, the majority of the MFIs were highly or averagely dependent on subsidy were perceived as sustainable. The results thus show a significant relationship between sustainability of the MFIs and level of subsidy dependence (X^2=31.25, df=4, p<0.05). Thus, MFIs who were highly dependent on subsidy from donors and governments were sustainable.

Therefore at 95% significant level, *the hypothesis that if subsidy dependence among MFI's is high then their sustainability will also increase was supported.*

Number of Branches and Sustainability of MFIs

Business expansion is considered a measure of growth and sustenance on the basis of increased number of clientele and hence more businesses. Therefore in an attempt to ascertain whether the number of branches impact on sustainability, it was hypothesized that: "*If MFI's increase their branches, then their sustainability will increase*".

The data revealed no significant relationship between availability of branches nationwide and sustainability (X^2=0.827, df=1 and p>0.05). Thus, the sustainability of an MFI was not dependent on the number of branches it has nationwide. Therefore, at the 95% significance level, *the hypothesis that if MFI's increase their branches, then their sustainability will increase was not supported.*

Contractual Agreements and Sustainability of MFIs

Critical to the lender-borrower agreement on the part of the MFIs is the rigid enforcement of contract agreements which is expected to impact on the performance of the MFI. In line with this it was hypothesized that: "*enforcement of rigid contractual agreements would lead to increased sustainability of MFI's*".
The assertion that enforcement of rigid contractual agreements would lead to increased sustainability was found to be true. From the results, it is obvious that those MFI's who enforced rigid contractual agreements were more likely to remain in operation for the next few years as opposed to those who did not rigidly enforce contractual agreements.

Thus the sustainability of the MFIs was not necessarily and significantly dependent on the enforcement of rigid contractual agreements (X^2=1.51 df=1 and p>0.05). Therefore at the 95% significance level, *the hypothesis that enforcement of rigid contractual agreements would lead to increased sustainability of MFI's was not supported.*

MFIs-Clients Relationship and Sustainability

It is believed that customer relationships are critical for the success of organizations; and especially in micro financing, trust and tact are key drivers. Indications are that if clients are handled with utmost professionalism their level of assurance increases and sense of recognition is enhanced. Therefore in an attempt to understand how lender-borrower relationship impacts on the performance of the MFIs, it was hypothesized

that: "*Improved lender-borrower relationship will increase sustainability of MFI's*".

The results revealed a very significant relationship between lender-borrower and sustainability of MFI (X^2=38.1 df=3 and p<0.05). Thus the sustainability of the MFIs was significantly dependent on improved relationship with their clients. This means that the better the relationship between the MFIs and their clients, the better their sustainability through repeat borrowing and referrals of prospective clients. Therefore, at the 95% significant level, *the hypothesis that improved lender-borrower relationship will increase sustainability of MFI's was supported.*

Hypotheses Testing on Impact of Business Strategy on Sustainability of MFIs

This section provides answers to the research question as to what kind of business strategies adopted has a significant impact on sustainability of MFIs. The main hypotheses are:

H (3a): If screening mechanisms are made more effective, it will lead to a significant increase in sustainability of MFIs.

H (3b): If group collateral is highly enforced, then sustainability of MFI is increased.

H (3c): If clients' meetings are highly enforced, then sustainability of MFIs will significantly increase.

H (3d): If Executives intensify their handling of defaulters then sustainability will increase.

H (3e): If Executives ensure that peer monitoring is intensified, then sustainability will also increase.

H (3f): If innovations in financial products increase, then sustainability of MFIs will increase.

Screening Mechanisms and Sustainability of MFI

Stiglitz and Weiss (1981) advocate the screening out of "bad" clients before loans are disbursed so that people who are likely to default in repayment of loans are weeded out. Although the majority of the MFIs had screening mechanisms, the question is to what extent is their screening mechanism effective in ensuring that microfinance institutions achieve their stated objectives. The test results yielded X^2=21.13, df=1, p<0.015; which show a significant relationship between availability of an effective screening mechanism and sustainability of MFIs. Therefore, at the 95% significance level, *the hypothesis that if screening mechanisms are made more effective, it will lead*

to a significant increase in sustainability of MFIs was supported.

Group Collateral and Sustainability of MFI

One way by which MFIs avoid high default rates is the use of group collateral where loans are made available to individuals in a group but the group faces the consequences if any member defaults in repayment. This has been found to be effective in minimizing default rates.. The test results revealed a significant (X^2= 29.33, df=1, p<0.010) relationship between use of group collateral and sustainability. This means sustainability was dependent on use of group collateral. Therefore at 95% significant level, *the hypothesis that if group collateral is highly enforced, then sustainability of MFI is increased was supported.*

Clients' Meetings and Sustainability of MFI

Regular meetings between MFIs and their clients, helps the credit officers of the MFIs to know their clients very well through the regular face-to-face interactions. This platform provides loan officers with cues about emerging problems from the attitudes and behaviour of the clients. Frequent meeting with clients in effect provides avenue for personalized relationships for the credit officers for effective monitoring. In line with this it was hypothesized that: "if clients' meetings are highly enforced, then sustainability of MFIs will significantly increase". The results showed that, sustainability was significantly dependent on a enforcing clients meetings (X^2=21.33 , df= 1 and p<0.013). Thus, all the MFIs who met frequently with clients were perceived as more sustainable than those MFIs who did not enforce clients meetings. Therefore at the 95% significance level, *the hypothesis that if clients' meetings are highly enforced, then sustainability of MFIs will significantly increase was supported.*

Intensive Handling of Defaulters and Sustainability of MFI

In case clients default, the MFIs adopt various measures to handle the defaulters such as holding the group responsible for the payment, persistent reminders and persuasions and even court actions. The question that remains is whether an intensive pursuit of the defaulters impact on the sustainability of the MFIs. In line with this it was hypothesized that: "if MFIs intensify their handling of defaulters then sustainability will increase". Sustainability was found to be significantly dependent on intensive pursuit of defaulters (X^2=21.12, df=1 and p>0.013). Therefore at the 95% significance level, *the hypothesis if MFIs intensify their handling of*

defaulters then sustainability will increase was supported.

Peer Monitoring is Intensified and Sustainability of MFI

With group collateral at the bargain front of the lending business of MFIs, peer monitoring becomes unavoidable since no member would like to be responsible for any members' act of omission. And since group members usually share common characteristics; or are engaged in similar activities; or stay within a distance of one another, one may posit that an intensive peer monitoring will enhance the sustenance of MFIs. Consequently, it was hypothesized that: "if MFIs pursue an intensive peer monitoring system, then sustainability will increase".

The results revealed that the majority (100%) of the MFIs who pursued an intensive peer monitoring were perceived as sustainable (X^2=20.12 , df=1 and p>0.015). Therefore at the 95% significance level, *the hypothesis that if MFIs pursue an intensive peer monitoring system, then sustainability will increase was supported*

Innovations in Financial Products and Sustainability of MFI

The results revealed that those MFIs who were innovative in their financial products were considered sustainable (86.8%). Conversely, those MFIs who were not innovative in their financial product developments were not considered sustainable (13.2%). The relationship between innovations in financial product development and sustainability was found to be significant (X^2=24.05, df=1 and p<0.001).

Hence *the hypothesis that, if innovations in financial products increase then sustainability of MFIs will also increase was supported.*

Hypotheses Testing on Environment and Governance and MFI Sustainability

In order to understand both the micro and macro factors that impact on the sustainability of the MFIs, issues relating to governance and environment were considered in the study. Governance issues related to the regulatory framework governing the operations of the MFIs which Staschen (2003) categorizes as primary (laws and acts of parliament) and secondary (benchmarks and procedures) that need to be adopted by the MFIs. The main issues considered were emergency loans, job creation, competition, Board of Directors, personnel constraints, loan recovery and the regulatory framework.

The research question therefore was which environmental and governance issues adopted has significant impact on the sustainability of the MFIs? Seven hypotheses were postulated as follows:

H 4a: If executives increase their response to emergency loans, then sustainability of MFI's will increase
H 4b: If MFIs create jobs directly, then sustainability will increase
H 4c: Increased competition in microfinance will lead to increased sustainability
H 4d: If Board of Directors are formed in MFIs, then sustainability will increase
H 4e: If MFIs employ and retain highly qualified staff, then their sustainability will increase
H 4f: If loan recovery increases for MFIs, then sustainability will increase
H 4g: If the regulatory framework is improved, it will increase sustainability of MFIs significantly.

The test results for these hypotheses provided insight into those macro level factors that impacted on the sustainability of the MFI in Ghana.

Emergency Loan and Sustainability of MFIs

It is argued that one of the failures of the traditional banks that MFIs came to correct was closeness to the community who are mostly poor by responding to their emergency needs. Granting of emergency loans was therefore considered a bait to attract and retain clients and enhance the sustainability of the MFIs. In line with this it was hypothesized that: *If executives increase their response to emergency loans, then sustainability of MFI's will increase.*

Thus sustainability of the MFIs was significantly (X^2=21.15, df=1, p< 0.012) dependent on the granting of emergency loans to clients. Therefore, *the hypothesis that if MFIs increase their response to emergency loans, then sustainability will increase was supported.*

MFIs Job Creation and Sustainability

The direct job creation by the MFIs will also enhance their sustainability. In line with this it was hypothesized that: *If MFIs create jobs directly, then sustainability will increase.*

Thus there was a significant relationship between direct job creation by the MFIs and their sustainability (X^2 = 6.04 , df =1 and p< 0.05). In effect, there was enough evidence at the 95% significance level to suggest that MFIs sustainability was dependent on their direct creation of jobs for their clients. *Therefore the hypothesis that if MFIs create jobs directly, then sustainability will increase was supported.*

Competition and Sustainability of MFIs

In line with this, it was hypothesized that *"Increased competition in microfinance will lead to increased sustainability"*.

The result (X^2=1.612 , df=1 and p<0.201), was obtained for the relationship between competition in microfinance delivery and sustainability. In effect sustainability of MFIs was not significantly dependent on competition. Therefore, at 95% significance level, *the hypothesis that if there is increased competition in microfinance then sustainability will significantly increase was not supported.*

Availability of Board of Directors and Sustainability of MFIs

To answer the question as to whether the presence of Board of Directors ensures good performance of MFIs, it was hypothesized that *"If MFIs have Board of Directors, then sustainability will increase"*.

The result (X^2=0.612, df=1 and p<0.601), was obtained. The relationship was however not significant (p>0.05). Therefore at 95% significant level, *the hypothesis that if Board of Directors is existent in MFIs, then their sustainability will increase was not supported*

Personnel Constraints and Sustainability of MFIs

To ascertain the impact of personnel constraints on the sustainability of MFIs, it was hypothesized that *"if MFIs employ and retain high qualified staff, then, their sustainability will significantly increase"*
A strong and positive result (X^2=22.05 , df=1 and p<0.001), was recorded for the relationship between quality of personnel and sustainability of MFIs. This means that a very high calibre staff corresponds with sustainability of MFIs. Therefore at 95% significance level, *the hypothesis that if MFIs employ and retain qualified staff, then their sustainability will significantly increase was supported.*

Loan Recovery and Sustainability of MFIs

The hypothesis was that *"If there are difficulties with loan recovery, then the sustainability of the MFIs will decrease"*.
There was a positive and strong relationship between loan recovery and sustainability of MFIs. A very high and significant (X^2=25.05 , df=1 and p<0.000) result was recorded. This confirms the findings that progressive lending based on prompt repayments, frequent repayment schedules and compulsory savings are most essential in ensuring sustainability of MFIs. Therefore, at the 95% significant level, *the hypothesis that if there are difficulties with loan recovery, then the sustainability of the MFIs will decrease was supported.*

Regulatory Framework and Sustainability of MFIs

The results revealed that where the regulatory framework was considered favourable the MFIs were sustainable (78.1%). Conversely where regulatory framework was perceived as restrictive the MFIs were not considered sustainable (21.93%). Thus, there was a significant relationship between sustainability of the MFIs and the nature of the regulatory framework (X^2=28.20 , df=1 and p<0.000).
There was therefore enough evidence at the 95% significance level to suggest that MFIs sustainability was dependent on the nature of the regulatory framework. Hence *the hypothesis that if the regulatory framework is favourable, it will increase the sustainability of MFIs significantly was supported.*

Logistic Regression for Performance of the MFI's

The data for the study also revealed a significant relationship between the performance of the MFI's and the four factors (Wald chi^2=46.53, Prob> chi^2=0.000 p<0.05) (See Table 5).

Table 5: Regression coefficients between sustainability and its factors

		B	S.E.	Wald	df	Sig.	Exp(B)
Step	IC	.069	.238	.084	1	.772	1.072
1	AC	1.782	.385	21.470	1	.000	5.940
	BS	.044	.255	.029	1	.864	1.045
	EG	.646	.279	5.359	1	.021	1.909
		-6.218	2.002	9.646	1	.002	.002
Constant							

Also, an R^2 (Nagelkerke) =0.447 (44.70%) was recorded and this corresponds with a high regression coefficient of r=0.6685 (66.85%). Thus, 66.85% of the changes in the performance of the MFI's can be explained by all or some of the four factors namely institutional characteristics (IC), agency cost (AC), business strategy (BS), environment and governance (EG).

The test of significance for the regression model yielded chi² (8) = 22.42, Prob>chi²=0.004. This means that at the 0.05 level, the regression model was significant in establishing a formal relationship between the performance of the MFI's and the four factors. The regression model for the performance of the MFI's from the results in Table 5 can be derived as:
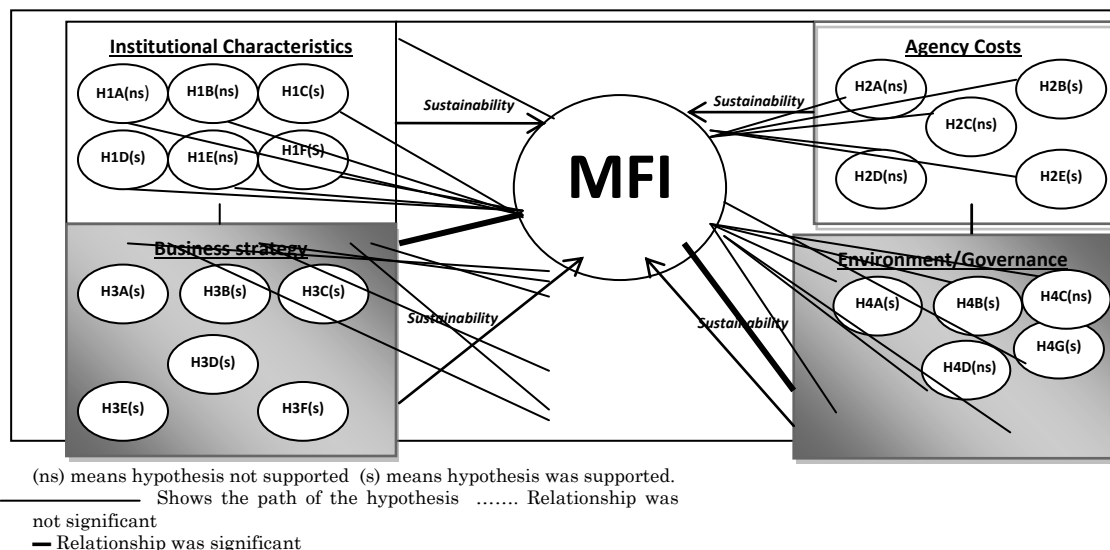
Performance =-6.218+0.069 (IC) +1.782(AC) +0.044(BS) +0.646(EG)

The results further indicate that two out of the four factors namely agency cost (AC) and environment and governance (EG) were significantly (p<0.05) predictive of the sustainability of the MFI's in Ghana since their t-statistics were significant at the 0.05% level (See Table 6).

Table 6: Listing of significant and non-significant hypotheses

Hypothesis	Path Institutional characteristics→ Sustainability of MFI	P value	Sig	Results
HIA	Ownership of institution→ sustainability of MFI	0.718	p>0.05	Not supported
HIB	More funds for lending→ Sustainability of MFI	0.202	p>0.05	Not supported
H1C	Motivation to grow business.→ Sustainability of MFI	0.000	P<0.05	Supported
H1D	Lending to Urban traders→ Sustainability of MFI	0.012	P<0.05	Supported
H1E	Increase funding→ Sustainability of MFI	0.087	p>0.05	Not supported
H1F	Good quality information→ Sustainability of MFI	0.000	P<0.05	Supported
Agency costs → Sustainability of MFI				
H2A	Increased sources of finance→ Sustainability of MFI	0.100	P>0.05	Not Supported
H2B	High subsidy dependence → Sustainability of MFI	0.000	P<0.05	Supported
H2C	Increased branches→ Sustainability of MFI	0.000	P>0.05	Supported
2D	Rigid enforcement→ Sustainability of MFI	0.100	p>0.05	Not Supported
H2E	Improved lender-borrower relation→ Sustainability of MFI	0.000	P<0.05	Supported
Business strategy → Sustainability of MFI				
H3A	Effective screening → Sustainability of MFI	0.015	P<0.05	Supported
H3B	Enforcing group collateral → Sustainability of MFI	0.010	P<0.05	Supported
H3C	Regular clients meetings → Sustainability of MFI	0.013	P<0.05	Supported
H3D	High methods of minimizing default rates→ Sustainability of MFI	0.000	P<0.05	Supported
H3E	Intensifying peer monitoring→ Sustainability of MFI	0.015	P<0.05	Supported
H3F	Innovation in financial prod. → Sustainability of MFI	0.001	P<0.05	Supported
Environment and Governance → Sustainability of MFI				
H4A	Emergency loans→ Sustainability of MFI	0.012	P<0.05	Supported
H4B	Job creation→ Sustainability of MFI	0.000	P<0.05	Supported
H4C	Increase competition→ Sustainability of MFI	0.201	p>0.05	Not supported

H4D	Board of Directors→ Sustainability of MFI	**0.601**	p>0.05	Not supported
H4E	Highly qualified staff→ Sustainability of MFI	**0.001**	P<0.05	Supported
H4F	Increased loan recovery→ Sustainability of MFI	**0.000**	P<0.05	Supported
H4G	Favourable regulatory framework→ Sustainability of MFI	**0.000**	P<0.05	Supported

(ns) means hypothesis not supported (s) means hypothesis was supported.
————————— Shows the path of the hypothesis ……. Relationship was not significant
▬ Relationship was significant

Fig. 2: The research model as observed from the findings

Confirmation of Research Model

A regression analysis was used to establish and test the significance of the relationships between sustainability of MFI's; and the four factors of sustainability. The data for the study revealed a significant relationship between the sustainability of the MFI's and the four factors (Wald chi^2=46.53, Prob> chi^2=0.000 p<0.05). Also, an R^2 (Nagelkerke) =0.447 (44.70%) was recorded and this corresponds with a high regression coefficient of r=0.6685 (66.85%). Thus, 66.85% of the changes in the performance of the MFI's can be explained by all or some of the four factors namely institutional characteristics (IC), agency cost (AC), business strategy (BS), environment and governance (EG). The test of significance for the regression model yielded chi^2 (8) = 22.42, Prob>chi^2=0.004. This means that at the 0.05 level, the regression model was significant in establishing a formal relationship between the performance of the MFI's and the four factors.

Fig 2 shows the research model which details the inter-relationship observed between the dependent variable (sustainability) and independent variables (institutional characteristics, agency costs, business strategy, environment/governance). The positive relationship between the independent and the dependent variables and the positive inter-relationships between the dependent variables is

a proof of the research model. The nature of the line indicates the strength of the relationship between the variables. The study therefore confirms the research model to a considerable extent .

Discussion

The study was guided by four principal objectives which was supported by a total of 24 hypotheses. The major goal of this study was to develop an explanatory framework for a better understanding of the factors that affect sustainability of Microfinance institutions in Ghana.

It must be noted that the objectives of the study were met. Not only did the study confirm the research model, but it also revealed that, to large extent sustainability of microfinance institutions is possible in Ghana. Although there were positive relationships between the dependent variable (sustainability) of Microfinance institutions and their independent variables (agency costs, business strategy, environment and governance and institutional characteristics), the study revealed a very strong and significant interrelationships between business strategy, environment/governance, agency costs, institutional characteristics and sustainability of MFIs. This means that though all the perceived factors tended to impact on sustainability of

MFIs, they placed much emphasis on their business strategy and environment/governance. This is a deviation from the original model which seeks to suggest the same level of impact between independent variables and the dependent variables. The results of the study were consistent with most of the theories and observations cited in the literature. For example the hypothesis on intensive "peer monitoring and group lending" (H3E, H3B) were supported which confirms the position of "peer monitoring is largely responsible for the successful financial performance of Grameen Bank of Bangladesh and of similar group lending progeammes elsewhere." Methods of minimizing default rates and increased loan recovery are further buttressed stated that the sustainability of Grameen Bank and of MFIs in general lies in the adoption of such policies which he terms "strategic credit policies" .This is supported by the hypotheses on high methods of minimizing default rates and increased loan recovery (H3D, H4F). The results (H4A) also support the observation which identified granting of emergency loans as a critical sustainability factor adopted by Grameen Bank. The critical triangle postulated by Zeller and Meyer [7] which emphasizes on institutional innovations and favourable regulatory framework is supported by our hypothesis H3F and H4G. Again, Zeller and Meyer [7] stressed that most of MFIs that reach large numbers of female and male clients below the poverty line require state or donor transfers to subsidize their costs. They further stressed that the most successful MFIs that have achieved financial sustainability have required investments by the state or donors in the past. This is supported by our hypothesis on high subsidy dependence (H2B).Table 6 shows the summary of hypotheses tested and the differentiation of those supported and those not supported by our test (table 6).

Conclusion and Policy Implications

The study concluded that of the many factors that affect the survival of MFIs the most important one are the strategies they adopt to run their organizations, their environment and the laws that govern their operations.
On the impact of the institution's characteristics on sustainability, the results supported hypotheses on motivation to grow, lending to urban traders and good quality information.

Motivation to grow is important if a microfinance institution is to become sustainable. Managers of MFIs must understand the difficulties involved in microfinance delivery and adopt prudent measures including the use of modern technology to enable the institution to grow. An institution that does not learn and adapt to changing technology can face a slow death.

Our study supported lending to urban traders as a sustainability factor. Of all the types of clients in the microfinance delivery, traders appear the most dominant. This is because they are classified as less risky and able to sell their wares quickly in the market and pay back their loans.

Good quality information is critical for the sustainability of MFIs. Lack of adequate and reliable information on the depth and breadth of outreach remains a challenge to the industry. These problems adversely affect the ability to properly target the right clients in order to meet the specific needs of such clients.

Another objective of the study was to ascertain which agency costs impacts significantly on sustainability of microfinance institutions. The study confirmed high subsidy dependence, and improved lender-borrower relationship as significant and positive on sustainability of MFIs.

Our study revealed that most of the MFIs were managing the agency issues fairly except for the FNGOs. This situation supports the reason why most of the FNGOs were highly subsidy dependent, with most of them not having any immediate plans of exiting . However the managers of MFIs that depend on subsidies need to understand that their long term survival and sustainability depends on being financially self-sufficient. Financial sustainability is the ability of an MFI to operate without reliance on donor subsidy. Indeed Schreiner and Yaron [5] contend that the subsidy dependence index is a summary of the sustainability of an MFI.

A recently released report by the Centre for the Study of Financial Innovation (CSFI, 2008) identified the greatest risk for microfinance as being in the area of governance and human resources. The dominance of today's microfinance leaders will be sustained only if these institutions can develop a set of highly skilled staff which they do not currently possess today. They will face difficulties in loan recovery. To be prepared for such situations, these MFIs will need good corporate governance and dynamic management who will pursue an agenda of improvement in efficiency and innovation [8-20].

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