



## An Evaluation of Sustainability and Subsidy Dependence of Microfinance Institutions in Ghana

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### Abstract

The research aims to explore the understanding of the relationship between sustainability of microfinance institutions (MFIs), subsidy dependence index (SDI) and operational self-sufficiency (OSS). The research study is based on initial exploratory study by analyzing data on 14 executive directors in qualitative interviews and 116 relationship executives in research questionnaires. The microfinance institutions identified were the Financial Non-Governmental Organizations (FNGOs), the Savings and Loans Companies (S&L), the Credit Unions (CUs), the Rural Banks (RBs) and the SUSU Companies. Multiple Regressions which allows for the testing of theories or models established a significant relationship between the Operational Self Sufficiency (OSS) and the predictors, especially the drop-out rate of clients and average loans. The Subsidy Dependence Index (SDI) was calculated for the various types of MFIs and the result was a high dependency ratio especially among the FNGOs. Though the dependency is on the decline, it is very slow indicating that most MFIs will depend on subsidies for a very long time to come.

**Key words:** Subsidy dependence; Sustainability; Operational self-sufficiency; Viability; Microfinance

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### INTRODUCTION

Microfinance developed as a source of finance and a development tool especially in developing countries after the pioneering works of McKinnon (1973) and Shaw (1973). According to Ledgerwood (1999), microfinance has evolved as an economic development approach intended to benefit low-income men and women. Provision of Microfinance services has spread across Africa in the last few decades as a way to harness and provide small financial services necessary for growth. Some of these institutions which provided these credits were supported through subsidized credits by international donor agencies and governments to enable them increase the depth of their outreach. Ghana was no exception to this phenomenon as noted by Steel and Andah (2003) and Aryeetey and Gockel (1991). However a central issue which has assumed important heights in the academic and policy circles is the sustainability and subsidy dependence of these microfinance institutions. The sustainability of microfinance institutions is central to the development of financial intermediation at the micro level.

Previous empirical studies have made important contributions, but they have been insufficient in establishing the extent of subsidy dependence of MFIs and the factors influencing it. Such a study is important both from operational as well as academic point of view. Again, in Ghana studies on microfinance have not empirically tested sustainability and operational self-sufficiency (OSS) of such institutions. Specifically, this study investigates the following research question:

# 1. WHAT IS THE EXTENT OF SUBSIDY DEPENDENCE ON SUSTAINABILITY OF MICROFINANCE INSTITUTIONS IN SUB-SAHARAN AFRICA WITH SPECIFIC REFERENCE TO GHANA?

Hypotheses posed are:

**H<sub>1</sub>**: Subsidy dependence of MFIs in Ghana is high.

**H<sub>2</sub>**: There are significant differences in the OSS of MFIs in Ghana.

**H<sub>3</sub>**: There are significant differences between OSS and its predictors.

An answer to this question requires investigation into the extent to which subsidies are perceived to impact on sustainability of microfinance institutions in Ghana and the development of sub-research questions. This research problem is investigated by gathering data from 116 relationship managers of microfinance institutions in Ghana regarding their activities and then matched with interview data collected from 14 Executive Directors and Managers on similar issues.

The paper is structured into six sections. It begins with the introduction by tracing the evolution of subsidies and this is followed by literature review which explores the theoretical underpinnings to the research. This is followed by the methods or approaches used in arriving at the results and the conclusions and policy implications to the research.

## 2. LITERATURE REVIEW

According to Zeller and Meyer (2002), 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 (Zeller and Meyer, 2002). 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 (Zeller et al., 1997). 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.

### 2.1 Subsidy Dependence Index (SDI)

Following Yaron (1994) and Khandker et al (1995) the subsidy dependence index is computed as follows:

$$SDI = \frac{NS}{LPxi}$$

*NS* = Net Subsidy

*SDI* = Subsidy Dependence Index

*LP* = Average loan portfolio

*i* = Average annual on-lending interest rate paid on that portfolio.

This ratio helps measure the percentage increase in the average on-lending interest rate required to eliminate subsidy in a given year while keeping its return on equity to the approximate non-concessionary borrowing cost. An *SDI* of zero implies full self-sustainability, meaning that profit is equal to the social cost of operation. A positive index would show that economic costs exceed profit; here the on-lending interest must be increased by the amount of *SDI* to eliminate the amount of net subsidy.

Authors (Yaron, 1994; Khandker and Khan, 1995; Morduch, 1999; Schreiner and Yaron, 1999; Schreiner, 2000) have summarized the sustainability of MFIs into their ability to exit subsidy dependence and fully cover their operational costs. A measure of subsidy dependence, the Subsidy Dependence Index (*SDI*) has in this regard been widely used in measuring the sustainability of microfinance institutions. According to Morduch (1999) sustainability of MFIs is at two levels; operational sustainability which deals with the ability of an institution to recover operational costs and financial sustainability which deals with the ability to operate without reliance on donor subsidy. Currently there is a paradigm shift from subsidized delivery programmes to commercial intermediation internationally (Robinson, 1975).

### 2.2 Operational Sustainability Model

The determinants of operational sustainability are modeled by adopting the model used by Woller (2003). The model is stated as follows:

$$Y_{it} = \beta X_{it} + u_{it}$$

$Y_{it}$  = a measure of operational self sufficiency for MFI *i* for period *t*,  $X_{it}$  is a vector of explanatory variables including MFI characteristics such as depth of outreach, dropout rate and staff productivity measures for MFI *i*=1...14 in period *t*=2003...2007,  $u_{it}$  = error.

The operational self-sufficiency index is the ratio of total operational income to interest expense, loan, loan loss provision and administrative expense. This measure shows how the institution is able to cover its operational costs. Other variables identified by Morduch (1999), Christen (2000) and Schreiner (2002) as affecting the sustainability of microfinance are administrative expenses, cost per borrower, loan officer productivity, portfolio at risk, average loans, active borrowers and dropout rate of clients. According to Adjasi and Kyereboah-Coleman (2007), the explanatory variables for the operational self-sufficiency model are defined as administrative expense ratio, the dropout rate, cost per borrower, portfolio yield, loan staff productivity, average loan size, portfolio at risk,

and active borrowers. Other variables are also considered by Woller (2003). The theoretical motivation for modeling these variables as determinants of operational self-sufficiency is based on the following hypothesized a-priori expectations between these variables and operational self-sufficiency (OSS).

### 3. 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 with focus on how dependent they are on subsidies (SDI) or operationally self-sufficient (OSS). This was followed by a self-administered survey involving 130 microfinance institutions. The sample selected covered all the types of microfinance institutions namely; Financial Non-Governmental Organizations (FNGOs), Savings and Loans Companies (S&L), Credit Unions (CUs), Rural Banks (RB) and SUSU companies.

The decision to conduct the exploratory interviews was based on the following reasons:

Subsidy dependence or operational self-sufficiency of microfinance institutions though widely studied in the developed countries, Asia and Latin American countries; the same cannot be said of sub-Saharan Africa in general and Ghana in particular. Therefore there are less comprehensive theories on microfinance institutions in Ghana.

Data for this study is collected from two sources; the financial reports (secondary) and structured questionnaires and interviews (primary) to elicit institutional characteristics and modes of handling the performance variables. Operating manuals where they were available and useful were used to examine the mode of day to day operations of the selected microfinance institutions. The survey data was complemented with information gathered through the qualitative phase. As such, the basis for the primary data used for the entire study was obtained from an exploratory stage and a qualitative survey stage. 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.

As one of the objectives of this research was to determine the extent of dependence on subsidies of MFIs, it was determined that the most appropriate sampling method to utilize was a 'two phased' stratified random sampling technique (Churchill, 2000). 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. The selection of Greater Accra, Central, Western, Eastern, Ashanti, Northern and Volta regions gave 130 MFIs, representing 74.4%. The

importance of achieving a high coverage is to ensure that the intensity of activities is captured to allow for the creation of a proportionate representation of the population within the research (Henry 1990; Frankfort-Nachimias & Nachimias, 1996). Limiting the coverage to all except Upper East, Upper West and Brong Ahafo was equally influenced by time and limited financial resources available for this research.

Subsidy Dependence Indices (SDI) and Operational Self-Sufficiency (OSS) were computed and analyzed for each type of MFI over the period under study to ascertain their subsidy dependence and trends in operational self-sufficiency. In analyzing the data for the study operational self-sufficiency was measured at the nominal level (yes=1, and no=0) which led to the use of the logistic regression and the chi-square test.

The main statistical tools used were the chi-square test of independence and correlations for the hypotheses since the levels of measurement of the variables were mainly nominal and or ordinal. For the secondary data, trend analysis was carried out and the regression model was used to establish a relationship between operational self-sufficiency (OSS) of the predictors namely administrative expenses (AE), dropout rate (DOR), cost per borrower (CPB), real portfolio yield (RPY), loan officer productivity (LOP), average loan (AL), portfolio at risk (PAR) and active borrowers (AB). In addition, One-Way ANOVA was used to ascertain if there were differences in the operational self sufficiency and subsidy dependence index of the MFI's. The hypotheses tested were carried out at 95% significance levels (0.05). When one chief executive (CUA) was interviewed on whether they depended on subsidies for their operations, this was his response "*when we started we needed support and therefore we had the government and overseas partners supporting us. Now we are self-sufficient, almost 100% okay*".

Another FNGO Chief Executive had this to say "*We are supported by international donors. You see we are directly under the church and we are enjoined to empower our members through microfinance so they can rise to their God given potentials. So yes, we will continue to receive support*".

### 4. EMPIRICAL RESULTS

The 14 MFIs used in the exploratory study were examined according to sectors to find their specific approaches to issues of subsidy dependence and operational self-sufficiency (see Table 1).

#### 4.1 Institutional Management of Borrowers, Staff, Cost and Subsidy Dependence.

The 14 MFIs used in the exploratory study were examined according to sectors (see Table 1) to find their specific approaches to dealing with the variables that affect OSS and SDI as shown in Table 1.

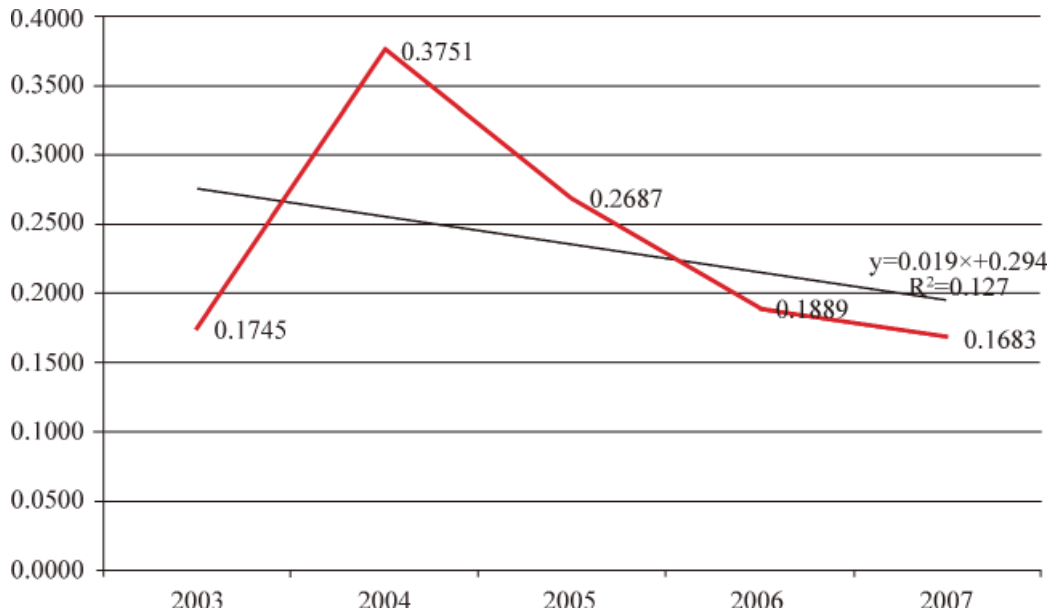
**Table 1**  
**SDI, Outreach, Staff and Administrative Productivity and Loan Quality Indicators Across Using the 14**  
**Exploratory Sampled Microfinance Institutions (Panel means 2003-2007)**

Variable	FNGO 1	FNGO 2	FNGO 3	FNGO 4	FNGO 5	S & L 1	S & L 2
<i>Outreach Breadth</i>							
1. Borrowers	14,025	522	1,096	565	1,866	12,000	6,500
2. Active	2,560	452	859	508	910	5,500	8,254
3. Women	12,988	376	566	384	1,447	4,800	5,225
4. Total Loans (GH Cedis)	214,510	315,000	289,000	453,000	153,000	1,233,200	866,000
<i>Outreach depth</i>							
1. Average Loans (GH cedis)	91,831	366.39	530.39	235.65	805.70	143.35	966.30
<i>Outreach worth</i>							
Dropout rate (ratio)	0.191	0.184	0.202	0.157	0.136	0.065	0.072
<i>Screening</i>							
Total Admin expense (GH cedis)	128,706	173,250	147,390	280,861	73,440	604,268	450,320
<i>Enforcement/Risk</i>							
1. Total bad debts cedis)	29,743	17,383	14,961	24,527	8,187	19,350	31,220
2. Portfolio at risk(ratio)	0.053	0.112	0.124	0.064	0.031	0.032	0.031
3. Loan officers	8	2	2	3	8	10	8
<i>Staff productivity</i>							
1. Loan officer Productivity	320	226	429.5	169.33	113.75	550	1031.75
2. Cost per borrower	50.275	383.30	171.58	552.88	80.70	109.87	54.56
<i>Administrative Efficiency</i>							
Administrative expense (ratio)	0.60	0.55	0.51	0.62	0.48	0.49	0.52
<i>Interest charged</i>							
1. Interest	27.2	22.1	25	22.7	21.6	36.0	36.0
2. Interest premium	13.74	8.64	11.54	9.24	8.14	22.54	22.54
3. Real Portfolio yield	0.649	0.889	0.962	1.583	1.237	0.996	2.356
<i>Sustainability ratios</i>							
1. OSS	0.346	0.350	2.137	1.642	1.755	3.331	2.945
2. SDI	0.1914	0.1102	0.1082	0.0832	0.3348	0.0398	0
Variable	S & L 3	CREDIT UNION 1	CREDIT UNION 2	RURAL BANK 1	RURAL BANK 2	SUSU 1	SUSU 2
<i>Outreach Breadth</i>							
1. Borrowers	16025	3522	1086	2595	1688	325	213
2. Active	11560	3522	1086	508	910	305	170
3. Women	6500	2376	665	384	447	210	150
4. Total Loans (GH Cedis)	1,145,100	141,500	558,000	645,300	505,300	90,000	165,350
<i>Outreach depth</i>							
1. Average Loans (GH cedis)	2,500	3,366.39	6,000	2,550	3,000	1000	1,250
<i>Outreach worth</i>							
Dropout rate (ratio)	0.061	0.001	0.002	0.168	0.163	0.361	0.231
<i>Screening</i>							
Total Admin expense (GH cedis)	824,472	39,620	111,600	225,855	293,071	13,800	29,763
<i>Enforcement/Risk</i>							
1. Total bad debts cedis)	29,441	383	296.52	7,527	12,187	350	120
2. Portfolio at risk(ratio)	0.064	0.004	0.0021	0.038	0.133	0.035	0.030
3. Loan officers	6	2	2	3	4	2	2
<i>Staff productivity</i>							
1. Loan officer Productivity	1,927	1761	543	169.33	227.5	302.5	85
2. Cost per borrower	71.32	11.25	102.76	444.59	322.06	45.25	175.08
<i>Administrative Efficiency</i>							
Administrative expense (ratio)	0.72	0.28	0.20	0.35	0.58	0.15	0.18
<i>Interest charged</i>							
1. Interest	48	19.5	19.5	22.7	22.7	24.0	24.0
2. Interest premium	34.54	6.04	6.04	9.24	9.24	10.54	10.54
3. Real Portfolio yield	3.388	1.135	1.564	1.467	1.894	2.232	2.112
<i>Sustainability ratios</i>							
1. OSS	2.581	3.115	4.481	3.138	1.878	2.247	2.754
2. SDI	0.069	0	0	0.058	0.093	0	0

Interest premium=interest charged- Treasury bill rate

A further explanation is provided below. All the microfinance institutions were examined to determine their subsidy dependence. A further examination was

done to determine the subsidy by type of MFI as depicted in Figure 1):



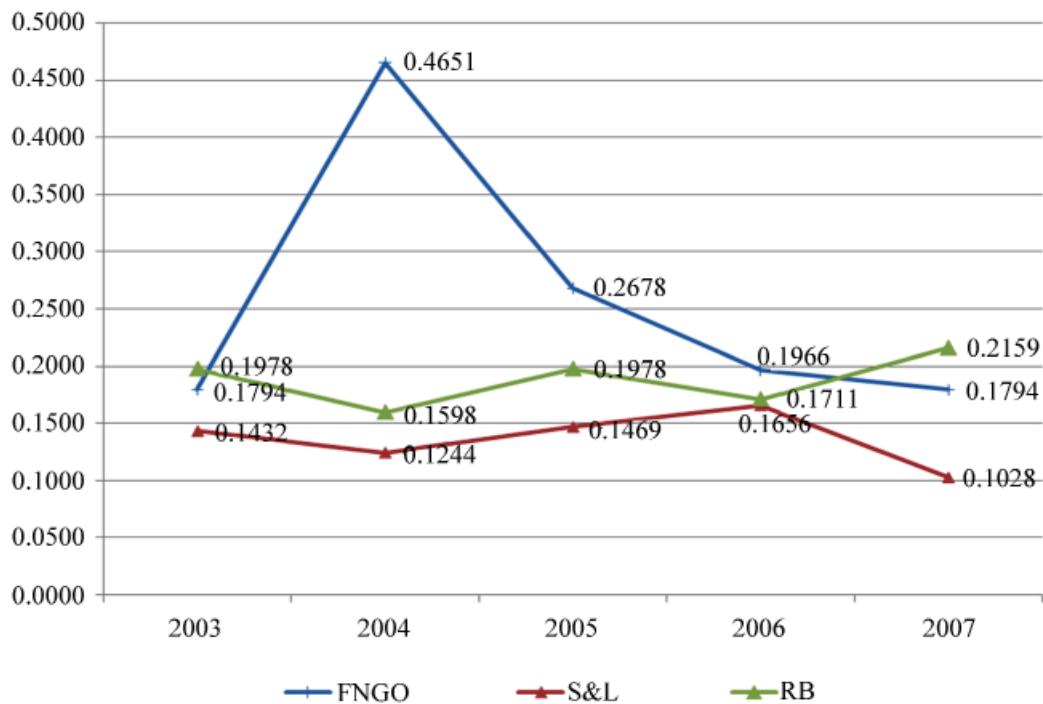
**Figure 1**  
**SDI of the MFI's (2003-2007)**

#### 4.2 Subsidy Dependence Index and Operational Self Sufficiency of the MFI's

The data for the study revealed that generally the average SDI of the MFI's increased sharply from 0.1745 in the year 2003 to about 0.3751 in 2004. It decreased steadily thereafter to 0.2687 in 2005 and then to 0.1683 in the year 2007 (see Figure 1).

The average annual rate of decrease was just about 0.019. This indicates that the net subsidy of the MFI's has

been decreasing at a rate of about 1.9%. This situation is worrying and does not augur well for the long term sustainability of the micro finance industry in Ghana as the MFI's would depend on subsidies for a long time to come. Only about 12.7% of the changes in the SDI could be attributed (explained) to the change in the economy. Indications are that much of the changes in the SDI could not be attributed or explained by the changes in the economic years (see Figure 2).



**Figure 2**  
**SDI of the MFI's by Type (2003-2007)**

The results in Fig.2 revealed that the SDI of the FNGO's increased drastically from 0.1794 in 2003 to an all time high of 0.4651 for the period under review. The SDI of the FNGO's, however, decreased sharply thereafter to 0.2678 in 2005, decreasing further but steadily to 0.1794 by the year 2007. The average annual increase in the SDI of the FNGO's was only 0.026 (2.6%). This was followed by the RB, which recorded marginal increase in SDI from 0.1978 in 2003, to 0.2159 in 2007, giving an average annual increase of 0.004 (0.40%). The SDI for the S&L decreased from 0.1432 in 2003 to 0.1028 in 2007. The average annual rate of decrease was 0.004 (0.04%). Further analysis of the mean SDI by type of MFI revealed significant differences in the SDI of the FNGO's, S&L and RB. The mean SDI's of 0.2577, 0.1366, and 0.1885 were recorded by the FNGO's, S&L and the RB respectively (Table 1).

**Table 3**  
**One-Way ANOVA for Mean Differences in SDI by Type of MFI's**

Source of variation	Sum of squares	df	Mean Square	F	Sig.(p-value)
Between groups	1.399	2	0.699	527.30	0.000
Within groups	0.467	352	0.001		
Total	1.865	354			

n.s. = not significant , p<0.05 = difference is significant at the 0.05 level

### 4.3 Multivariate Regression Model

Multiple regression is a statistical technique that allows for the prediction of a dependent variable on the basis of its scores on several independent variables. The regression model used can be expressed as

$$y = K + ax_1 + bx_2 + cx_3 + \dots$$

where, y= dependent variable, K = constant,  $x_1, x_2, x_3, \dots$  are the independent variables, and the a, b, c, .... are the regression coefficient (beta) of the independent variables.

The beta value is a measure of how strongly each predictor variable influences the criterion variable. It is the regression coefficient of the independent variables. Thus, the higher the beta value the greater the impact of the predictor variable on the criterion variable.

On the operational self-sufficiency (OSS) of the MFI's, the regression model was significant in establishing a relationship between the OSS and the predictors (F=5.661,

The One-Way ANOVA test results yielded F=527.303, df = 2,352 and p<0.05 (Table 2). This shows that the differences in the mean SDI of the MFI's were significant at the 0.05 level.

**Table 2**  
**Descriptive Statistics of SDI by Type of MFI**

Type of MFI	Mean	Standard deviation	Standard Error
FNGO	0.2577	0.0153	0.0009
S&L	0.1366	0.0477	0.0075
RB	0.1885	0.0660	0.0076

The post-hoc test for pairwise comparisons confirmed that the mean SDI of the FNGO's (0.2577) was significantly higher than that of the RB (0.1885) and S&L (0.1366). Also, the SDI of the RB (0.1885) was significantly higher than that of the S&L (0.1366).

df=8, 97 and p<0.05). A regression co-efficient of 0.321 and an R-square of 0.103 (10.3%) were obtained. This means that only 10.3% of the variation in the OSS can be explained by changes in the predictors namely administrative expenses (AE), dropout rate (DOR), cost per borrower(CPB), loan officer productivity (LOP), average loans (AL), portfolio at risk (PAR), average loans (AL) and active borrowers (AB).

The test results in Table 4 show that only dropout rate (DOR) and average loans (AL) were significantly (p<0.05) predictive of OSS. The relationship between OSS and cost per borrower (CPB); and portfolio at risk (PAR) were found to be negative. Thus increasing CPB and PAR lowers the OSS of the MFI's by 3.110010 (3.11E8%) and 4.9% respectively. Though there were positive relationships between OSS and LOP; DOR; AB and AE; the relationships were not significant at the 0.05 level (p>0.05).

**Table 4**  
**Regression Coefficients of the Predictors of OSS**

Model Variables	Coefficients	Standard Error	t	Sig.
Constant	0.892	0.044	20.118	0.000
Admin Expenses (AE)	0.103	0.059	1.746	0.082
Dropout rate (DOR)	0.287	0.145	1.976	0.049
Cost per borrower (CPB)	-0.000000000311	0.000	0.122	0.903
Loan Officer Productivity (LOP)	0.000000857	0.000	0.298	0.766
Average Loans (AL)	0.0000022	0.000	3.672	0.000
Portfolio at risk (PAR)	-0.049	0.080	0.620	0.535
Active borrowers (AB)	0.000000760	0.000	0.695	0.488

Dependent variable :OSS

\*\* Other variables which are considered as possible determinants of OSS have been dropped due to multicollinearity problems.

The results in Table 4 further shows a negative relationship between OSS and CPB, and PAR, however, these were not significant at the 0.05 level ( $p > 0.05$ ). Contrary to expectation, the DOR recorded a positive, even though not significant, relationship with OSS. In other words, the DOR may not necessarily be indicative of borrower dissatisfaction, but rather rigid enforcement of repayments schedules, high interest rates or ineffective monitoring of clients.

**Table 5**  
**Descriptive Statistics of OSS by Type of MFI**

Type of MFI	Mean	Standard deviation	Standard Error
FNGO	1.0367	0.0755	0.0049
S&L	1.2094	0.0047	0.0008
RB	0.9846	0.2722	0.0314

The result in Table 5 shows that the S&L recorded the highest OSS of 1.2094, followed by the FNGO's (1.0367) and the RB (0.9846).

**Table 7**  
**One-Way ANOVA for Mean Differences in OSS by Type of MFI's**

Source of variation	Sum of squares	df	Mean Square	F	Sig. (p-value)
Between groups	1.372	2	0.686		
Within groups	6.843	352	0.019	35.29	0.000
Total	8.215	354			

n.s. = not significant ,  $p < 0.05$  = difference is significant at the 0.05 level

It can be observed (Table 8) that the mean differences for the pair of groups were all significant at the 0.05 level. Thus, the OSS of the S&L (1.209) was significantly higher than that of the FNGO's (1.037) and the RB (0.985). Also, the difference in the OSS of the FNGO's (1.037) and the RB (0.985) was found to be significant at the 0.05 level. Therefore the hypothesis that there will be significant differences in the OSS of the MFI's in Ghana was supported.

**Table 8**  
**Post-Hoc Test for Pairwise Comparisons of Mean Difference in the OSS**

Type of MFI	FNGO's	S&L	RB
FNGO's	-	$p < 0.05$	$p < 0.05$
S&L	-	-	$p < 0.05$
RB	-	-	-

n.s. = not significant ,  $p < 0.05$  = difference is significant at the 0.05 level

## 5. DISCUSSION OF THE RESULTS

The discussions will be based on the different MFIs (FNGOs, S&L, Credit Unions, Rural Banks and Susu companies) and how the SDI variables of outreach breadth, outreach depth, Screening, enforcement and risk, staff productivity, administrative efficiency and interest charged affect their operations (Table 1).

The FNGOs come second in terms of outreach among the MFIs, with FNGO having the highest number of women as clients at 12,988. It has an average total loan

**Table 6**  
**Post-Hoc Test for Pairwise Comparisons of Mean Differences in SDI**

Type of MFI	FNGO's	S&L	RB
FNGO's	-	$p < 0.05$	$p < 0.05$
S&L	-	-	$p < 0.05$
RB	-	-	-

n.s. = not significant ,  $p < 0.05$  = difference is significant at the 0.05 level

The One-Way ANOVA results (Table 7) for the test of mean differences revealed that there were significant differences in the mean OSS of the MFI's ( $F = 35.29$ ,  $df = 2$ , 352 and  $p < 0.05$ ). Thus, the OSS of at least two of the groups of the MFI's differed significantly. Further to this, the post-hoc test for multiple comparisons (using the Least Square Deviation–LSD) was used to ascertain which sets of two groups of MFI's differed significantly in their OSS (Table 6).

of 285,000 Ghana Cedis with an average loan size of 300 Ghana Cedis. Dropout rate average 19%, but seem to be increasing for the FNGOs a sign that they are unable to retain and sustain clients. Women, however seem to be favoured here as they have the highest number. It is believed that they have shown a good track record of repayment in rural localities. The SDI estimates for the FNGOs appear high (33.48%) over the period. This means they have to increase their yield on loans to be able to exit subsidy dependency. The FNGOs use group lending method. Screening of clients is done through interviews and the completion of forms. On the average it takes up to one month to process a loan application. Like the others, FNGOs demand collateral as a guarantee before loans are disbursed. By law clients cannot save with FNGOs and this limits their ability to accumulate funds for depth and breadth of outreach. This may account for the high level of subsidy dependence among FNGOs and also the fact that they normally start as philanthropic organizations and are perceived as such. The data from the exploratory study indicates that all the savings and loans institutions appear to be doing very well as their on-lending interest rate appear to be higher than others in the industry thereby generating increased revenue and covering their costs.

The Credit Union Associations are mostly a part of an organization with the workers as the clients, and therefore one qualifies to be client and to be able to access loans on the basis of being a staff of the organization. What this means is that there are no strict and formal interviews or

screening of clients since they are known members of the organization. Consequently all the borrowers are active members of the microfinance scheme with a record of low dropout rates averaging 1.5%. This situation translates into low levels of bad debts and portfolio at risk. No collaterals are demanded.

Rural Banks are institutions that were set up with a focus of bringing banking to the doorsteps of the rural poor and those marginalized by the traditional banking system. Therefore, micro financing was largely part of their mandate. Their clientele cut across all forms of businesses. Due to the localized nature of their operations they give relatively small loans to avoid difficulties with repayments. Loans are disbursed to clients who are introduced by an already existing customer who guarantees for the client. Sometimes some background checks are conducted from within the community where the client resides. This approach however does not seem to impact on loan recovery as the Rural Banks experience relatively high bad debts and portfolio at risk. Interest charged is uniform at 22.7% per annum. The rural banks receive subsidies from the Central Government though their operational self sufficiency index is good.

The Susu operators do not appear to be regulated and are also able to attract borrowers through less costly procedures. Indeed the regulatory environment seems to favour Susu operators to the disadvantage of other MFIs. For example, they do not have any formal laws regulating their operations and therefore cannot tell where their mandate ends. This situation has caused most clients to lose their savings as the collectors vanish with their savings. They normally demand collateral in the form of physical movable property, or you need to be introduced by a known client who will be your guarantor. The Susu operators do not operate on subsidies and from Table 1 it is clear that the Susu companies are operationally self sufficient.

## CONCLUSION AND IMPLICATIONS

The Subsidy Dependence Index showed a decreasing trend, though at a slow rate. This is an indication that most of the MFIs will continue to rely on subsidies for a long time to come. The Multiple factor analysis established that the regression model was significant in establishing a relationship between the dependent variable, Operational Self Sufficiency (OSS) and the predictors. Using single factor analysis, the regression model was used to establish a formal relationship between each independent variable and the dependent variable. The following were the major findings of the study.

i. Subsidy dependence among the MFI's in Ghana was high especially the FNGOs who do have any immediate plans of exiting and the significant operational self-sufficiency (OSS) variable were drop-out rate and average loans, confirming hypothesis (1), confirming Zeller

and Meyer (2002) that many MFIs that were perceived successful required state or donor transfers to subsidize their costs (pp5).

ii. Results from the model of determinants of operational self-sufficiency show that a reduction in dropout rates helps MFIs to increase the worth of outreach and obtain additional revenue from lending, confirming hypothesis (3) that there are significant differences between OSS and its predictors (Table 7). This further helps MFIs to cover their operational costs and thereby increase operational sustainability but this is not the same for all the MFIs examined, confirming hypothesis (2) that there are significant differences in the OSS of MFIs in Ghana and also significant differences between OSS and its predictors.

The study was based on cross sectional data; therefore causal links among variables could not be established clearly. The model developed therefore suffers from this limitation. The study confirms the view that operational self-sufficiency and subsidy dependence of MFIs is a complex phenomenon, hence more research that combines multiple factors to arrive at a better understanding of what leads to operational self-sufficiency is advocated. The replications of this research by covering all the ten regions of Ghana showing their peculiarities in the delivery of microfinance is advocated.

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