

## Microcredit and Poverty Reduction in Ghana

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### ABSTRACT

Interest in poverty sprang across the world and necessitated a worldly reduction policy strategy through the millennium development goals. The emergence of the Sustainable Development Goals (No Poverty by 2030) has taken interest in poverty to a higher level. In search for strategies to combat poverty, one strategy was common to all: *microcredit*. Governments, donors and NGOs around the world responded enthusiastically. In the acknowledgment of microcredit, the UN celebrated the year 2005 as a year of microcredit (Mia, 2005). As a result, microcredit as a financing instrument is perceived to be effective means against hunger and poverty (Duflo, 2007). Ghana stands visible in the area of microcredit (319 microcredit institutions as at March, 2018-BoG, 2018). However, few studies have investigated the effects of microcredit on poverty reduction in Ghana. The factors used are purely qualitative and lacks the quantitative components. Moreover, these studies viewed poverty from a single dimension and lacked nation-wide coverage. This study employs the Foster, Greer and Thorbecke (FGT) measures of poverty to provide diversified ways of measuring poverty. Also the study adopted the ordered logistic regression to analyse the effect of microcredit on poverty. It was found that amongst ten administrative regions, the incidence of poverty and poverty gap are not evenly distributed. Also, persons who take loan are likely to move into a better welfare bracket and thus reducing poverty. It is recommended it has to be the policy of the central government to educate its citizens on microcredit.

**Keywords:** Poverty, Millennium Development Goals, Sustainable Development Goals, Foster, Greer and Thorbecke (FGT) measures of poverty and Ordered Logistic Regression

### 1.0 BACKGROUND

Interest in poverty sprang across the world and necessitated a worldly reduction policy strategy through the millennium development goals (MDG-goal 1: Eradicate extreme poverty and hunger) (Barr, 2005). Millennium development goal 1 has seen the number of hungry people in the world decrease to fewer than one billion. Meanwhile, the Food

and Agriculture Organisation of the United Nations believes that this number is still unacceptably high (United Nations Development Programme-UNDP, 2017).

The emergence of the Sustainable Development Goals (SDG1-No Poverty by 2030) has taken interest in poverty to a higher level. The UNDP (2017) puts it “Eradicating poverty in all its forms remains one of the greatest challenges facing humanity. The number of people living in extreme poverty dropped by more than half between 1990 and 2015. As of 2015, about 736 million people still lived on less than USD1.9 a day”. This poverty according to the UNDP (2017) could be seen as: lack food, clean water, and sanitation. The SDGs are therefore bold commitment to end poverty in all forms and dimensions by 2030 (Jones, Hillier and Comfort 2017; Bebbington and Unerman , 2018)

According to Duflao (2007) in search for strategies to combat poverty, one strategy was common to all: *microcredit* (Jones *et al* 2017, Niculescu, 2017; Bebbington and Unerman, 2018). Microcredit is the form of financial development that has its primary aim to alleviate poverty (Bar, 2005). Governments, donors and NGOs around the world responded enthusiastically with plans and promised to work together towards the realization of poverty reduction (International Peace Institute, 2019 and The United Nations Conference on Trade and Development, 2015). In the acknowledgment of microcredit, the UN celebrated the year 2005 as a year of microcredit (Mia, 2005). As a result, microcredit as a financing instrument is perceived universal as a very effective means against hunger and poverty, principally in developing countries (Duflao, 2007).

Microcredit is not a new development (Yunus, 1974; World Bank,2015 ; Imtiaz et al., 2014; Duflao, 2007). Some developed countries (Ireland-18th century; Bangladesh in 1976; ) as well as developing countries (Kenya, Nigeria, Uganda) have a long history of microcredit. During the eighteenth and nineteenth centuries, in a number of European countries, microcredit evolved as a type of the informal banking for the poor.

Ghana is currently ranked amongst the lower middle income countries with a per capita GDP of USD 1,142 (World Development Indicators-WDI, 2017). There is the conception that lowering poverty is one sure indicator of development. According to Seers (1969) explanation of development, there are certain critical questions that one should ask about a country's development: What has been happening to poverty? What has been happening to unemployment? and what has been happening to inequality?. If all these problems have gone down then that is the period of development for the country concerned. However, if one or two especially when all these problems have gone worst, then it is strange to call it development even when per capita income has doubled. A significant number of Ghana's population remains poor (Kristofer Hamel, Balwin Tong and Martin Hofer, 2019; World Bank, 2019). The interest remains that there is indication of increasing microcredit institutions in Ghana while poverty level raises. An investigation into effects of microcredit on poverty reduction in Ghana would be very helpful in understanding the implications of the worldly and universally embraced concept of microcredit.

## **2.0 PROBLEM STATEMENT**

Ghana was able to cut the country's poverty rate from 52.6% to 21.4% between 1991 and 2012 (WDI, 2015). World Development Indicators (2017) showed that the poverty rate in Ghana has seen a downward movement on the average but still remains significant: 12 percent live below USD 1.9 a day while 32.5 percent and 60.5 percent live below USD 3.2 and USD 5.5 a day respectively. Meanwhile, the Sustainable Development Goal one (SDG-1) hopes to end poverty by the year 2030. According to the newly released "Poverty Reduction in Ghana: Progress and Challenges," report, sustained poverty reduction requires a commitment to reducing inequality and improving access to opportunities for all citizens. Ghana's poverty is relatively higher compared to other countries. For instance poverty rate in South Africa is 17%; Tunisia is 16 % and Morocco is 15% (CIA World Factbook, 2018). Governments and stakeholders have attempted to introduce poverty reduction strategies to curb the poverty menace in Ghana. These strategies in Ghana include Microfinance and Small Loans Centre

(MASLOC), Livelihood Empowerment Against Poverty (LEAP) programme and establishment of microcredit institutions.

World Bank report (2015) indicates that growing microcredit has tendency to instigate a positive consequential effect on levels of poverty reduction. Since the introduction of microcredit across the world, there are evidences to show that countries that embraced it have enjoyed substantial reduction in poverty levels. (Imtiaz et al. 2014, Chaudhry, 2003; Visconti, 2012; Banerjee and Duflao, 2007; Chandarsekar and Parkash, 2010; Hossain , 2012).

Ghana is one of the countries in Africa that stands visible in the area of microcredit (137 microcredit institutions as at October, 2020-BoG, 2020) expansion aside countries like Kenya, Nigeria and Uganda. Kenya currently has 13 microcredit institutions (Central Bank of Kenya, 2020). Nigeria also has 942 microcredit institutions (Central Bank of Nigeria, 2020) whiles Uganda has 112 microcredit institutions (Association of microcredit Institutions of Uganda, 2020). Evidence have shown that these countries (Kenya, Nigeria and Uganda) have benefited immensely from the inception of microcredit (Chaudhry, 2003; Visconti, 2012; Banerjee and Duflao, 2007; Chandarsekar and Parkash, 2010; Hossain , 2012). For instance Duflao (2007) has pointed out that poverty levels in Kenya and Uganda reduced by 25% and 19% respectively with the spread of microcredit. Also, Zhang (2017) suggests that in developing and emerging countries, the establishment of more microcredit institutions should be encouraged, and more funds should be directed from development agencies and governments into microcredit institutions, to reduce poverty. With this relative level of higher number of microcredit institutions in Ghana, there are still visible levels of poverty as shown by the world development indicators (WDI, 2017

Few studies have investigated the effects of microcredit on poverty in Ghana. (Owusu et al, 2013, Boateng, 2015; Obeng, 2011; McDonald, 2013; Adjei, 2009; Boadu, 2009). Using qualitative method Owusu et al (2013) explored the contributions of microcredit

programmes to poverty reduction and empowerment among women in the Northern Region of Ghana. The study found out that microcredit institutions provide credits with conditions that are not favorable to the needs of the women. Obeng (2011) used a multi-stage sampling technique to study the impact of microcredit on poverty reduction in Ghana. The study finds that people, especially the helpless and marginalized were receiving credit which impacted positively on the poverty levels of the beneficiaries. Also, McDonald (2013) explored the impact of microcredit is an effective poverty mitigation tool for women in Ghana's informal sector. The study suggests that microcredit has made only inadequate progress as a poverty mitigation scheme for women in Ghana's informal sector.

This study is different from past studies. It employs the Foster, Greer and Thorbecke (FGT) measures of poverty to provide diversified ways of measuring poverty. That is the Headcount Index, Poverty Gap Index (PG)/ Intensity of poverty and Squared Poverty Gap Index (SPG)/ severity of poverty. The study also uses the ordered logistic regression which reveals the quantitative effect of microcredit on poverty. The study as well, adopts a nationwide survey (Ghana Living Standard Survey Six-GLSS6). The GLSS6 has larger sample size of 16772. According to the central limit theorem the larger sample size enhances the generalizability and efficiency of the estimates.

### **3.0 OBJECTIVES**

The general objective of this study is to look at the concept of microcredit and poverty in Ghana. Specifically, the study seeks to: Investigate incidence and severity of poverty in Ghana and Examine the effect of microcredit on poverty in Ghana.

### **4.0 Data Types and Data Source.**

The data was taken from the Ghana Living Standards Survey Six (GLSS6). The GLSS6 is chosen because of its uniqueness in terms of large sample size and nationwide coverage. The sample size of the GLSS6 is sixteen thousand, seven hundred and seventy-two (16,772). According to the central limit theorem the larger the sample size the more sample statistic approaches the population parameter. This therefore makes the generalization of results possible and also efficient.

## 5.0 Empirical Model Specification

From the literature, different methods (Béné, C., Mindjimba, K., Belal, E., Jolley, T., 2000; Corcoran, E, 2001; Pittaluga, F., Corcoran, E., Senahoun, J, in SFLP Workshop, 2001; Corcoran, E., Johnson, B., Senahoun, J., Theielun, C, working paper, 2002) have been used to study poverty. In this study the specification of the models takes inspiration from theory and empirical literature.

### Foster, Greer and Thorbecke Measures (FGT) of Poverty

The first measure is the *Headcount Index of Poverty*, given by the proportion of the population for whom total per-capita household consumption (income)  $y$  is less than the poverty line  $z$ . It is the most frequently used poverty measure. The main advantage of this statistics is its simplicity. If  $N_p$  is the number of poor people in the population of size  $N$ , then the Headcount is given by:

$$P_0 = \frac{N_p}{N} \dots \dots \dots (1)$$

Where:  $P_0$  = proportion of poor population,  $N_p$  = number of poor and  $N$ =total population  
However, the headcount measure is totally insensitive to differences in the depth of poverty. Poverty Gap Index is the aggregate shortfall of the poor relative to the poverty line. The income required to bring all the poor above the poverty line. It takes into account the average income of the poor and its distance from the poverty line.

$$P_1 = PG = \frac{1}{n} \sum_{i=1}^q \left[ \frac{(Z-Y_i)}{Z} \right] \dots \dots \dots (2)$$

Squared Poverty Gap Index is the mean of the squared proportionate poverty gap. It reflects severity of poverty. It shows income inequality among the poor (Makoka and Kaplan, 2005).

$$P_2 = SPG = \frac{1}{n} \sum_{i=1}^q \left[ \frac{(Z-Y_i)}{Z} \right]^2 \dots \dots \dots (3)$$

The severity index has the main advantage for comparing policies which are aiming to reach the poorest, but it is more difficult to interpret and is less intuitive than the two previous poverty measures. Where:  $Z$ = poverty line,  $Y_i$  = income or consumption

(welfare indicator) below poverty line,  $q$  = Number of poor respondents, and  $n$  = Total number of respondents.

### Ordered Logistic Regression Model

The Logistic Regression Model is derived as

$$\begin{aligned} \Pr(Y_i \leq j) &= \Pr(B_1 \text{LOAN} + B_2 \text{WAGE} + B_3 \text{EMPLOYMENT} + B_4 \text{GENDER} + B_5 \text{DEPENDANTS} + B_6 \text{EDUCATION} + B_7 \text{AGE} + u_i \leq a_j) \\ &= \Pr(u_i \leq a_j - B_1 \text{LOAN} - B_2 \text{WAGE} - B_3 \text{EMPLOYMENT} - B_4 \text{GENDER} - B_5 \text{DEPENDANTS} - B_6 \text{EDUCATION} - B_7 \text{AGE}) \end{aligned}$$

where there are  $J$  ( $=5$ ) ordered alternatives. WAGE is money received by an individual. Employment is whether an individual has a job. The value is one (1) if an individual is public Employee, the value is two (2) if an individual is private Employee, the value is three (3) if an individual is self-employed in non-agricultural sector, the value is four (4) if an individual is self-employed in agricultural sector, the value is five (5) if an individual is unemployed, and the value is six (6) if an individual is other. GENDER is whether the individual is a male or female. The value is one (1) if an individual is a female but the value is zero (0) if otherwise. DEPENDANTS are number of dependants an individual has. EDUCATION is the level of education which involves four categories (uneducated, basic, secondary, middle school leavers certificate and tertiary) with the reference category being uneducated. AGE is the age of the individual.  $\mu$  is Error term,  $B_1 \dots B_7$  implies the parameters to be estimated. Given that  $\mathbf{X}'\mathbf{s}$  represents the regressors (LOAN, WAGE, EMPLOYMENT, GENDER, DEPENDANTS, EDUCATION and AGE).

## 6.0 RESULTS

The section concentrates on the inferential aspects of the study. This section provides a discussion of the poverty trends from 2005 to 2013 and also for logistic regression specified in the methodology. *As a robustness check, the Ordered Probability Model was also used.* The discussion focuses on the various variables that are analyzed in the tables.

### Foster, Greer and Thorbecke Measures (FGT) of Poverty in Ghana (2005-2013)

Amongst the ten administrative regions, the incidence of poverty and poverty gap are not evenly distributed vis-a-vis Foster, Greer and Thorbecke Measures (FGT) of Poverty. Greater Accra has a very low level (5.6%)



**Table 1: Poverty in Administrative Regions of Ghana (2005-2013)**

Region	Poverty incidence (P <sub>0</sub> )	Poverty gap (P <sub>1</sub> )	Squared poverty gap (C <sub>1</sub> )	Poverty incidence (P <sub>0</sub> )	Poverty gap (P <sub>1</sub> )	Squared poverty gap (C <sub>1</sub> )
	<i>2012/2013</i>			<i>2005/2006</i>		
Western	20.9	5.7	29.5	22.9	5.4	28.2
Central	18.8	5.6	21.4	23.4	5.6	25.8
Greater Accra	5.6	1.6	9.8	13.5	3.7	13.4
Volta	33.8	9.8	36.7	37.3	9.2	34.3
Eastern	21.7	5.8	30.1	17.8	4.2	33.3
Ashanti	14.8	3.5	10.3	24.0	6.4	16.3
Brong Ahafo	27.9	7.4	25.8	34.0	9.5	28.7
Northern	50.4	19.3	33.5	55.7	23.0	41.5
Upper east	44.4	17.2	48.9	72.9	35.3	56.2
Upper west	70.7	33.2	51.2	89.1	50.7	65.6
Overall in Ghana	24.2	7.8	27.4	31.9	11.0	38.8

*Source: Ghana Living Standard Survey Six*

of poverty incidence, which is 18.6 percentage points lower than the national rate of poverty. The same cannot be said of the three northern regions, which comprise mainly savannah areas. More than four in every ten persons are poor in Upper East (44.4%), increasing to one in every two in the Northern region (50.4%) and seven out of every ten in Upper West (70.7%). The data indicated that, even among the three northern regions of Ghana, there are very wide differences between their rates of poverty incidence, irrespective of the closeness of the regions and whether the regions concerned share boundaries

In terms of extreme poverty incidence, apart from the three northern regions, whose rates are higher than the national rate of extreme poverty, all the other regions in the coastal and forest areas have rates lower than the national average. Upper West region has the highest extreme poverty incidence of 45.1 percent, followed by Northern (22.8%) and Upper East (21.3%). In terms of contribution to extreme poverty the Northern region accounts for slightly over a quarter of the extreme poor in Ghana, far more than any other region. The three northern regions combined account for more than half of those living in extreme poverty (52.7%). The pattern is very similar to the GLSS findings in 2005/06, although the three northern regions account for slightly less of the extreme poor in 2012/13 than in 2005/06



### **Ordered Logistic Results**

From the Table 2 an individual who takes loan is likely to move into a better welfare bracket and thus reducing poverty. In this regard individuals who take up loans are more likely to upgrade their living standards than those who do not take loan. As indicated in the Table 2 an individual who takes up loan is likely to move into higher welfare zone by a margin of 0.1886159 than those who do not take up loans. This value is statistically significant at 5% error level. It should be noted that this definition of poverty is the broader definition of poverty by this study. That is by this definition of poverty individuals who take the loan may have its effect spread over various aspects of their economic life like asset acquisition, consumption of utilities, payment of electricity bills, water bills and many more.

In respect of the loan variable if poverty is narrowly defined like the absolute definition then one may say that the loan variable (which is a measure of microcredit) is not statistically significant. The loan variable though not statistically significant has the tendency to reduce poverty (i.e. -0.1254498). In this regard individuals who are deemed to be poor from that narrow perspective are not really and truly poor. Literature has a mixed conclusion on absolute definition of poverty. Hussain and Hanjra (2003) explained that social dimensions like isolation, vulnerability, insecurity, powerlessness, social exclusion, gender and environmental disparities. However, as far back as 1969, Dudley Seers had made the use of income (absolute measure of poverty) as an indicator for defining poverty. World Bank (2018) also uses the income as basis for defining poverty. Defining poverty therefore becomes dependent on the needs of the society in question. In the Ghanaian Context availability of basic needs like food and shelter are key determinants of one's poverty level (GLSS-6). So far, microcredit as analyzed from the various logistic regression models indicates adverse effects on poverty increase. Thus more microcredit is likely to help the eradication of poverty as postulated by the world's economic leadership (UN, World Bank and IMF). The challenge would be to how to identify the needs of the individual and therefore provide microcredit to assist accordingly. This indeed could be the subject for further studies. The argument soars to also challenge the definition of absolute poverty definition as just the

individuals income may not be the only measure of living standards and therefore poverty.

**Table 2: Ordered Logistic Regression Results**

Independent variables	coefficient	Robust standard error	Z	p-value
LOAN	0.1886**	0.0754	2.5	0.012
EMPLOYMENT:				
Public	0.1079	0.1478	0.73	0.465
Private	0.1898	0.1442	1.32	0.188
Self non-ag	0.1304	0.1424	0.92	0.36
Self ag	-0.7773*	0.1412	-5.51	0.000
Unemployed	-0.5381*	0.1614	-3.33	0.001
Other	-0.4259*	0.1502	-2.84	0.005
SEX-MALE	-0.1857*	0.0354	-5.25	0.000
DEPENDANTS	-0.3155*	0.0076	-41.26	0.000
EDUCATION:				
BECE	0.7124*	0.0463	15.39	0.000
MSLC	0.9634*	0.0408	23.59	0.000
SSS	1.3414*	0.0591	22.69	0.000
VOC/TECH	1.5921*	0.0745	21.37	0.000
TERTIARY	2.2901*	0.0830	27.58	0.000
Age in years	-0.0001	0.0011	-0.08	0.939

**SOURCE:** Author's Construction, 2021. \*Statistically significant at 0.01 error level.

\*\*Statistically significant at 0.05 error level (Dependent variable is Poverty).

*public=public employment, private=private employment, self non-ag=self employed in non-agricultural sector, self ag= self employed in agricultural sector. BECE=Basic Education Certificate Examination, MSLC=Middle School Certificate, SSS= Senior Secondary School Certificate Examination, and VOC/TECH= Vocational, Technical and Teacher Training Certificates.*

Another variable of, the employment status of the individual is likely to affect the poverty status. That is whether the individual is unemployed, self-employed, works for the public sector or private sector worker is likely to affect the poverty status. Even the sector an individual works has impact the poverty status of the individual. For instance, if an individual works in a public sector then the person is more likely to be in better welfare bracket.

That is public sector workers have 0.1079417 more of moving to a higher welfare bracket than a retired worker (60+ years). That is those in active service in the public sector are more likely to have poverty reduced than those who are retired from active service. This also raises the argument that those in public service are at least better off when poverty is broadly defined. That is they are able to provide for basic amenities and utilities like education, asset acquisition, consumption of utilities, payment of electricity bills, water bills and many more.

In addition, if an individual is self-employed in a non-agricultural enterprise the person is likely to be in better welfare bracket at the national level than retired. That is at statistically significance of 5% error level, self-employed in a non-agricultural enterprise obtains a value of 0.1304444 (with p-value =0.36) of moving into a higher welfare bracket. In this case they are less likely to be poor per the definition of poverty from the broader perspective. However, this variable is also not statistically significant at 5 % error level.

Meanwhile, if an individual is self-employed in agricultural enterprise, the person is likely to be in lower welfare bracket at the national level than retired. That is those that are self-employed in agriculture are like to be entangled with the poverty menace. This

variable either defined from the narrow sense or broader perspective is statistically significant. This is also an indication that those into agriculture face a lot of poverty related problems. Those in this category have a value of -0.7773403 (p-value=0.00) being in a lower welfare bracket than retired. This is possibly one the reasons why the agricultural population in Ghana is ageing. Policies of Government such as youth in agriculture may find it difficult to succeed if the youth continue to witness that poverty is the result of engaging in agriculture.

Furthermore, the unemployed is also more likely to be entrapped by the poverty menace. Whether poverty is defined from the narrow sense or from a broader perspective unemployment has the likelihood of resulting in one thing: poverty. From the broader sense the unemployed has the value of -0.5381352 (with p-value=0.001) of being in better welfare bracket than the retired. The more unemployed there are in society, the more poverty that is observed in society. Per the works of Seers (1969) the higher poverty and unemployment the less developed a nation becomes.

Table 2 again emphasizes that the level of education attained by the individual has the likelihood of moving the individual into a higher welfare bracket. For an individual with Basic Education Certificate Examination (BECE) is likely to enter higher welfare bracket than those without education. From Table 2 those BECE has a value of 0.7124478 (with p-value=0.000) more than those without education in entering better welfare bracket. In this case the indication is that at least basic education is enough to help reduce poverty. The Free and Compulsory Universal Basic Education (F-CUBE) policy in Ghana is therefore a laudable policy. After all poverty reduction breeds development (Seers, 1969). The result is not different from looking at the impact of BECE when poverty is looked at from the narrow perspective.

In the same manner those with Middle School Level Certificate (MSLC) have better chance of extricating themselves from poverty whether the menace is looked at from narrow perspective (-1.174895 with p-value=0.00) or broader perspective (0.9633708 with p-value=0.00). That is MSLC also has the tendency and the likelihood to move

individuals to at least meet their daily expenses in terms of amenities and utilities like education, asset acquisition, consumption of utilities, payment of electricity bills, water bills and many more.

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