

Measuring Multidimensional Poverty in Ghana's East Gonja District*

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Abstract: This paper elaborates on recent developments in the Multidimensional Poverty Index Approach (MPI) to measuring rural poverty through an investigation of poverty determinants in the East Gonja District of Ghana. The study uses cross-sectional data from 310 household heads collected through individual survey questionnaires. Descriptive statistics and a probit model were used to analyze the data. The results show that 56 percent of the interviewed household heads were living below the extreme poverty line set by the Ghana Living Standard Survey 6. The probit analysis suggests that religion, land ownership, area of land cultivated, monthly household income and access to an urban market significantly influence the level of poverty in the area.

Keywords: Poverty, Measurement, Multidimensional, Index, Households, District, Ghana

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Since Sen's (1976) classic article on the topic, there has been considerable progress in both the theory and methods of poverty measurement. This more complex and nuanced view of poverty is reflected in the World Bank's (2001a: 3) *Poverty Trends and Voices of the Poor*, which defines poverty as:

multidimensional phenomenon; encompassing inability to satisfy basic needs, lack of control over resources, lack of education and skills, poor health, malnutrition, lack of shelter, poor access to water and sanitation, vulnerability to shocks, violence and crime, lack of political freedom and voice.

In addition, the World Bank's (2001) Development Report describes poverty as "pronounced deprivation in well-being" and emphasizes that poverty has different aspects: low income, limited access to education and health care, voicelessness, powerlessness, vulnerability and exposure to risk are considered equally important aspects of poverty. Measuring the multiple dimensions of poverty constitutes a tool with an extraordinary potential to target the poorest and design policies that directly address the interlocking deprivations poor people experiences (Alkire & Santos 2007; 2010; 2011; 2011a; 2011b).

However, standard practice continues to rely heavily on the less than desirable but easily understood poverty rate or headcount approach. The poverty "threshold", or "poverty line", is the "minimum level of income deemed necessary to achieve an adequate standard of living in a given country. The conventional approach remains the utilization of a poverty line as a measure that separates the poor from the non-poor. It is a means of aggregating the poor into various groups of poverty; those whose income or consumption fall below the line are poor and those above it are non-poor.

The main reason why innovations in the measurement of poverty and poverty intensity have not been more widely used by practitioners and scholars is partly because of their abstract mathematical presentation which has not provided policy-makers, scholars or the public with an intuitive understanding of their meaning and application (Sen 1976;

Foster, Greer, & Thorbecke 1984; Shorrocks 1995; Foster & Shorrocks 1991; Osberg 2000).

This paper attempts to elaborate on the recent developments in poverty measurement, focusing on the Multidimensional Poverty Index Approach (MPI). The MPI builds on recent advances in theory and data to present the first global measure of its kind, and offers a valuable complement to traditional income-based poverty measure (Alkire & Santos 2011). As the name suggests, MPI is a cluster of indicators used to measure the development of nations, individuals and households in terms of multiple dimensions of poverty and deprivation. The MPI reflects both the incidence of multidimensional deprivation, and its intensity—how many deprivations people experience at the same time. It can be used to create a comprehensive picture of people living in poverty, and permits comparisons both across districts, countries, regions and the World and within countries by ethnic group, urban/rural location, as well as other key household and community characteristics. One advantage of the MPI is that it is an improvement of the previous measures of poverty and development because it is able to identify the core poor in terms of deprivation and individual level poverty at the household which other measures do not. Methodologically, the MPI is measured by using “micro datasets”. It is estimated using ten indicators as the yard stick for measuring poverty and deprivation. These ten indicators are consistent with the three dimensions of the UNDP Human Development: Education, Health and Standard of Living.

Data for the study is from the East Gonja District of Ghana. The study uses cross-sectional data from 310 household heads collected through individual survey questionnaires. Descriptive statistics and a probit model were used to analyze the data. The results show that 56 percent of the interviewed household heads were living below the extreme poverty line set by the Ghana Living Standard Survey 6. The probit analysis suggests that religion, land ownership, area of land cultivated, monthly household income and access to an urban market significantly influence the level of poverty in the area.

Poverty in Ghana

The Ghana Poverty Reduction Strategy (GPRS) recognizes poverty as multi-dimensional with complex interactive and causal relationships between the dimensions. For purposes of the Ghana Poverty Reduction Strategy (GPRS 2005:3) poverty is defined “as unacceptable physiological and social deprivation”. In Ghana, there are two poverty lines:

[1]) a lower poverty line of 792.05 Ghana cedis per adult per year: this focuses on what is needed to meet the nutritional requirements of household members. Individuals whose total expenditure falls below this line are considered to be in extreme poverty, since even if they allocated their entire budget to food, they would not be able to meet their minimum nutrition requirements (if they consume the average consumption basket). This line is 27.1 percent of the mean consumption level in 2012/13...

[and 2) an] upper poverty line of 1314.00 Ghana cedis per adult per year: this incorporates both essential food and non-food consumption. Individuals consuming above this level can be considered able to purchase enough food to meet their nutritional requirements and their basic non-food needs. This line is 44.9 percent of the mean consumption level in 2012/13. (GSS 2014b)

Poverty in the country is measured through periodic Ghana Living Standards Surveys (GLSS). The 1991-1992 GLSS 3 found that 51.7 percent of the population was living below the national poverty line. By 1998-1999 (GLSS 4) this had fallen to 39.5 percent and by 2005-2006 (GLSS 5) it had fallen to 28.5 percent (Ghana Statistical Service 2007). In absolute terms, the number of poor people in Ghana has fallen from 7.9 million in 1991-1992 to 6.2 million in 2005-2006. The number of people described as extremely poor declined from 26.8 percent to 18.2 percent, most of the extremely poor live in the rural areas.

According to the Ghana Statistical Service, Ghana's poverty level in 2012/2013 had declined to about 24.2 percent from the 51 percent

recorded in 1991. This means about 24.2 percent of Ghanaians numbering some 6.4 million cannot afford to spend GHS3.60 (US\$ 1.16) on food a day. The number of people below the poverty line was about 7 million in 2005. Also about 8.4 percent of the population live in extreme poverty. This indicates they cannot afford to spend more than GHS2.17 (US\$ 0.70) on food in a day (Ghana Statistical Service [GSS] 2007; 2014b).

The reduction in poverty in 2013 was at the aggregate level and not evenly spread throughout the country. The contribution to poverty incidence differs across various demographic categories and ecological zones. Urban areas in 2012/2013 contributed 22 percent to national poverty. In 2012/2013, the rural population consisted of 50 percent of the population of Ghana; however, it accounted for 78 percent of those in poverty (GSS 2014b). This nearly matches with the earlier poverty profile reports of 1998/1999 and 2005/2006 where over 80 percent of the entire population beneath the poverty line in Ghana were rural dwellers (GSS 2007). Among rural areas where poverty is prominent, the poverty incidence is much higher among those in rural savannah areas, which accounts for more than 40 percent to the overall poverty in Ghana (GSS 2014b). The examination of the Ghanaian situation equally illustrates that poverty is largely a rural phenomenon.

The current national poverty rate at 24.2 percent is an indication of a relatively high level of poverty in the country marked by widespread regional disparities. However, poverty in the three regions in the savanna (Northern, Upper East and Upper West) remains high between 52–88 percent. In 2005–2006, the three Regions in the north of Ghana accounted for just under 22 percent of the population, but 45 percent of the headcount poor, 57 percent of the headcount extreme poor and 80 percent of extreme poverty severity in the country (Ghana Statistical Service 2007; 2008; 2014b).

Those households relying heavily on agriculture for their livelihoods are vulnerable in particular to climatic shocks, such as bushfires, droughts and floods, sometimes with more than one of these

calamities falling in one year. Other risks arise from market volatility, the rising price of agricultural inputs, and human risks such as susceptibility to disease and malnutrition (NDPC 2014). Where they are able, households take measures to reduce their exposure to risk. For example, diversifying their income sources through migration and remittances, or planting improved seed varieties or multi-cropping.

Coping strategies obviously depend on the shock in question, but include: sale of assets, including livestock, reduction in food intake, engaging in petty trade, migration, children dropping out of school to enter the informal labor market, self-medication or use of unorthodox medicine, and reliance on families, Community Based Organizations (CBOs) or Non-Governmental Organizations (NGOs) for assistance. Since time immemorial, there have been traditional systems of social protection in place in almost all societies in Ghana which were anchored on the help and support of the extended family system (Manboah-Rockson 2016). However, because of migration of the younger family members into the cities, there is lack of support from these traditional institutions. The family is no longer capable of supporting the deceased and old members of the family on their own.

Multidimensional Index Approach

Mathematically, the MPI is calculated as $MPI = H \times A$. Where H is the “headcount or the percentage of people who are poor” and A is “the Average Intensity of deprivation of households” (Alkire & Santos 2011).

Measuring poverty using the multidimensional approach has become a viable alternative to the income approach. It is a direct method for identifying the poor and vulnerable in society. It provides an opportunity for ascertaining whether a person meets a set of minimum basic needs. Each person is then categorized not just by income but by a number of indicators which may include; health, housing conditions etc. Inherent in the multidimensional approach is the assumption that income alone is an insufficient indicator for measuring human deprivation

(Alkire & Santos 2011; Tsui 2002).

The Probit Model

To estimate the determinants of poverty in the study area, a probit model was used. This model was used because of the mutually exclusive nature of the dependent variable. It also allows for the assessment of how each independent variable affects the probability of being poor or non-poor. Additionally, predicted values do not lie outside the probability range because the functional form of the model follows a cumulative distribution function which ensures that the bounds $0 \leq p \leq 1$ are maintained. The study assumes the probability of a household head being poor or non-poor is influenced by an underlying response variable that captures the true social economic status of the household head. Since the dependent variable y is dichotomous (*i.e.* $0 =$ being poor or $1 =$ non-poor), the underlying response variable y^* would be defined by the regression relationship:

$$y^* = \sum x_i' \beta' + u_i \quad (1)$$

y^* is latent variable and hence not observable. What is observable is the dummy which is explained by

$$\begin{aligned} y &= 1 \text{ if } y^* > 0 \\ y &= 0 \text{ if otherwise} \end{aligned} \quad (2)$$

In the probit model, error term u has a normal distribution. If the assumption of normality I^* is less than or equal to I can be computed from the standard normal cumulative distribution function as follows

$$P_i = Pr(y = 1|X) = Pr(I^* \leq I_i) = Pr(Z_i \leq \beta X) = F(\beta X) \quad (3)$$

Where $Pr(Y|X)$ is the probability that an event occurs (*i.e.* being

poor or non-poor) given the values of X variables and Z is standard normal variable with zero mean and unit variance. F is the standard normal cumulative distributive function which can be written as

$$F(\beta X) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\beta X} e^{-z^2/2} dz \quad (4)$$

The empirical model to assess the determinant of poverty is specified as follows

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + u_i \quad (5)$$

Where Y = household head economic status (1= non-poor, X_1 = poor), X_2 = age, X_3 = religion, X_4 = land area cultivated, X_5 = land ownership, X_6 = number of livestock, X_7 = monthly income, X_8 = distance to water source, X_9 = number of persons in room, X_{10} = access to urban market and X_{10} = household savings. β_0 = constant term

$\beta_1, \beta_2, \beta_3, \dots, \beta_{10}$, are the parameters of the respective explanatory variables in the model, and u_i is the error term.

Profile of Study District

The East Gonja District is located at the South-eastern part of the Northern Region of Ghana. The district is among the districts of the northern region which has the largest land size. Salaga, which is the capital town of the East Gonja District, is centrally located and has a population of approximately 26,663 (GSS 2014). There are two major languages spoken in the district capital and across the district. These languages are Hausa and Gonja. See Figure 1 below for the location of study district in the regional and national context.

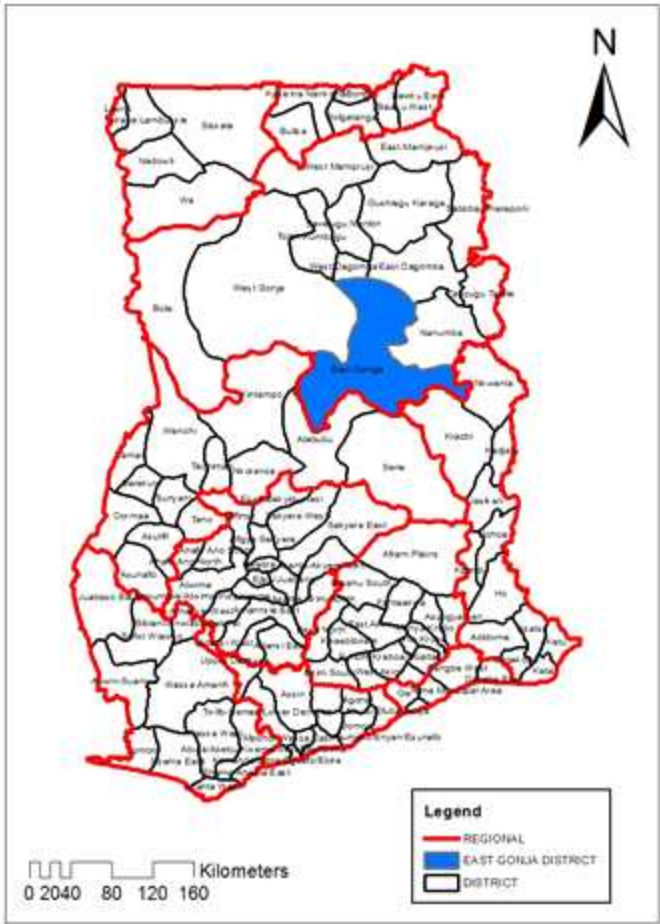


Figure 1. Map of Ghana showing East Gonja district. Source: EGD, 2014.

The East Gonja District shares boundaries with Yendi and Tamale Metropolitan to the North, Central Gonja District to the West, Nanumba-North, Nanumba-South and Kpandai Districts to the East, and the Brong Ahafo Regions to the South. The total land area of the district is 9,059.96 sq kilometres, occupying about 15.3 percent of the landmass of the Northern Region. See Figure 2 below for the boundary districts of the East Gonja District.

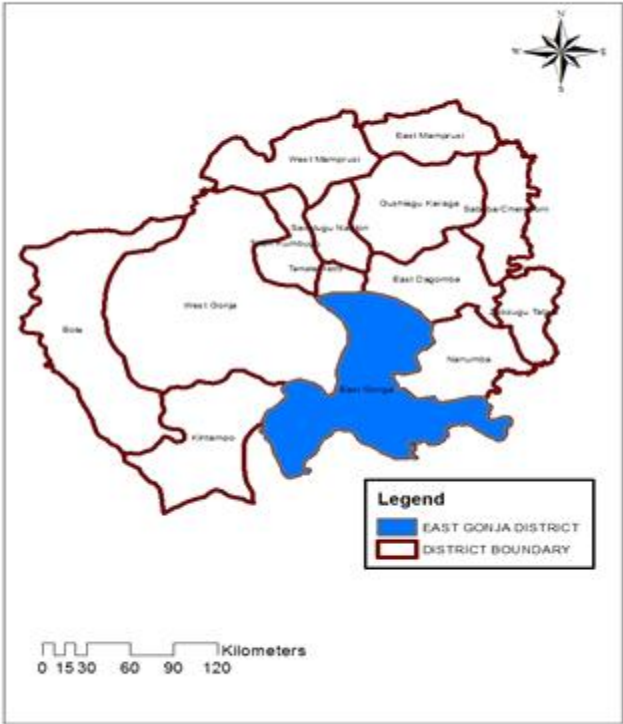


Figure 2. Northern region map of Ghana showing the East Gonja District. Source: EGD, 2014.

According to the 2010 population and housing census, the district has a total population size of 134,450 covering an area of about 8,340.1 square kilometers. This gives a population density of about 16 persons per km². The total number of males (69,721) is higher than the females (65,729). This gives a sex ratio of 106.1. The population of the district is predominantly rural constituting 81.3 percent of the total population of the district.

The East Gonja District Assembly consists of 50 Assembly members with 35 elected and 15 appointed. The administrative capital is centrally located at Salaga. Out of the 50 assembly members, only five are women and they are appointed members. The district is represented by two members of parliament who represents the Salaga North and

Salaga South constituencies. For easy administration, the East Gonja District has been zoned into six Area Councils with 35 electoral areas. The District Chief Executive is the Chief executive officer of the Assembly with both Administrative and Political responsibilities. The District Coordinating Director is the Chief Administrator of the Assembly. The 11 decentralized departments are all present and functional in the district.

Data

In order that the population is adequately represented in the study, the method of stratified random sampling was used. The population was divided into meaningful strata or subgroups, which in this case comprise the six area/town councils in the study area. The district is well demarcated according to six areas and town councils which is also along ethnic groupings. To allow for equal ethnic representation of respondents all the sub-districts were included in the study. Simple random sampling was then used to select the communities and individuals for the study. To determine the number of people to be allocated to each stratum, the method of proportional allocation was used. This method ensured that each group had a fair representation. Thus, the sample size selected from each stratum was proportional to the population.

Results and Discussion

Demographic characteristics of household heads and household members

The section presents the demographic characteristics of the households in the East Gonja District of the Northern region of Ghana. Male headed households were 91.3 percent of the respondent households. This is far higher than the national average of 65.7 percent. Out of the total 1677 household members recorded, 838 were males

while 839 were females (50 percent each respectively). This conforms to the population profile of Ghana with 49.5 percent males and 50.5 percent females. The socio-demographic data generated from the household survey further showed that the largest number of household members (29.6 percent) fall within the 0–9 years' age bracket, followed by 26.7 percent in the 10–19 bracket, 14.4 percent in the 20–29 bracket, 13.3 percent in the 30–39 bracket. Only 3.8 percent were older than 60. The youthful age structure represents a high potential for rapid growth as well as a high dependency burden. While in developed countries about two active persons support one dependent, in Ghana one active person supports two dependents (UNFPA 2014). In the study district, one active person supports three dependents. The mean age of the households' heads interviewed was about 44 years. This is relatively an older population but they are still within the working age group. The demographic structure gives an indication that fewer persons in the study district are living above 60 years.

Similarly, 89.7 percent of the households were married household heads. Less than 10 percent of the interviewed household heads were not married and have never married before. Also, 0.3 percent have married before but are now divorced. However, 1.9 percent of the household heads interviewed were widowed.

Education levels are low. The mean number of years spent in school by the respondent household heads was 2 years. The majority (77.4 percent) of the household heads have never been to school before. About 11.9 percent of the household heads have attained either primary or middle school education, while 7.4 percent had secondary education. Similarly, only 1 percent undertook a certificate course after completing their middle school or secondary education. Two point three percent had tertiary education. The low level of education in the area may be having an effect on adoption of new agricultural technologies in the area.

The region is religiously diverse. Islam is the dominant religion in the area, with 45.5 percent of the respondents being Muslims. This was followed by Christianity with 31.9 percent, and 21.9 percent were

practicing traditional African religions. Less than 1 percent of the interviewed household heads did not want to disclose their religious identity.

Major occupation of household heads

There is minimal diversity of major occupations for the household heads in the study area. The analysis of the individual interview survey data shows that many (86.5 percent) of the household heads received their main source of income from farming. About 5.5 percent of household heads derived their livelihoods from trading. Furthermore, 4.2 percent of the respondents were civil or public servants, and only 0.6 percent household heads were artisans. Finally, 3.2 percent of the respondents reported being unemployed. The 2010 population and housing census reported the district's unemployment rate at 3.2 percent (GSS 2014).

Table 1.

Area of Land under Cultivation, Land Ownership and Acquisition Problems

Land area (acres)	Frequency	Percentage
1–10 acres	245.0	82.2
11–20 acres	41.0	13.8
21–30 acres	8.0	2.7
above 30	4.0	1.3
Land ownership	Frequency	Percentage
Community owned	232	78.1
Family owned	62	20.9
Other	3	1.0
Total	297	100
Difficulty of Land acquisition	Frequency	Percentage
Difficult	6	2.01
Not difficult	287	97.9
Total	293	100

The average size of land cultivated by households in the study area was about 7.1 acres. The majority (82.2 percent) of respondents

cultivated between 1–10 acres. This means that many of the household heads in the area were smallholder farmers as shown in Table 1 below. About 13.2 percent farm between 11–20 acres while 2.7 percent cultivated between 21–30 acres. Only four household heads had farms larger than 30 acres.

In terms of land ownership, 78.1 percent of the respondents said that the land in which they were farming belongs to the community. About 20.9 percent of the household heads interviewed in the area indicated that their land was owned by the family, while only 1 percent indicated that the land they cultivated was owned by others. This includes borrow and rented land, and share cropping. With regards to land acquisition in the study area, the majority of the household heads (97.9 percent) that farm as their main occupation reported that it is not difficult to acquire land for cultivation purposes in the area. About 2 percent suggested that it was difficult acquiring land in the study area.

Household income and expenditure

The living standard measure entails the calculation of total consumption expenditure for each household adult equivalent scale based on 2900 calories per adult equivalent per day. The Ghana Living Standard Survey 6 came out with two poverty lines. The upper poverty line which was set at GHS 1314.00 and the lower poverty line set at GHS 792.00 as extreme poor. It is important to note that these two poverty lines were set for 2012/14 year at which time 1 dollar was equivalent to 2.70 Ghana Cedis. The northern region and for that matter the East Gonja District is among the poorest regions in Ghana and lagged behind in terms of achievement of several development indicators. The mean annual income of the household heads in the study area was about GHS 997.05. This is below the Ghana Living Standard Survey upper poverty line of GHS 1314.00 and above the lower, extreme poor, poverty line set at GHS 792.00. The majority (70.6 percent) of the household heads had an annual income below 1000 GHS. For income between GHS 1001–

2000, about 16.5 percent were in this range. Furthermore, 5.5 percent of the respondents have an annual income between GHS 2001–3000 while 4.5 percent have an annual income of GHS 3001–4000. Also, 0.6 percent and 2.3 percent have an annual income between GHS 4001–5000 and above GHS 5000 respectively.

On average, a household head in the study area spent about GHS 1311.79 in a year. This is slightly below the upper poverty line but above the lower poverty line. With regards to expenditure, more than 50 percent have an annual expenditure of less than GHS 1000.00 as shown in Table 2 below along with other expenditure levels.

Table 2.

Household Annual Income and Expenditure

Income	Frequency	Percentage
1–1000	219	70.6
1001–2000	51	16.5
2001–3000	17	5.5
3001–4000	14	4.5
4001–5000	2	0.6
Above 5000	7	2.3
Total	310	100
Mean annual income GHS 997.05		
Expenditure (GHS)	Frequency	Percentage
1–1000	185	59.7
1001–2000	78	25.2
2001–3000	19	6.1
3001–4000	11	3.5
4001–5000	6	1.9
Above 5000	11	3.5
Total	310	
Mean annual expenditure GHS 1311.79		

Social economic status of household heads

The pie chart below presents the social economic status of the household heads. The study uses the extreme poverty line in its

categorization of a household head being poor or non-poor. The extreme poverty line was used because the average expenditure of the study respondents was below the upper poverty line suggesting that all the household heads were living around the extreme poverty line. From the analysis of the data as presented by the pie chart below, 55 percent of the household heads were poor as they were leaving below the lower poverty line of GHS 792.00 per year. About 45 percent were considered non-poor as they were spending above the lower poverty line.

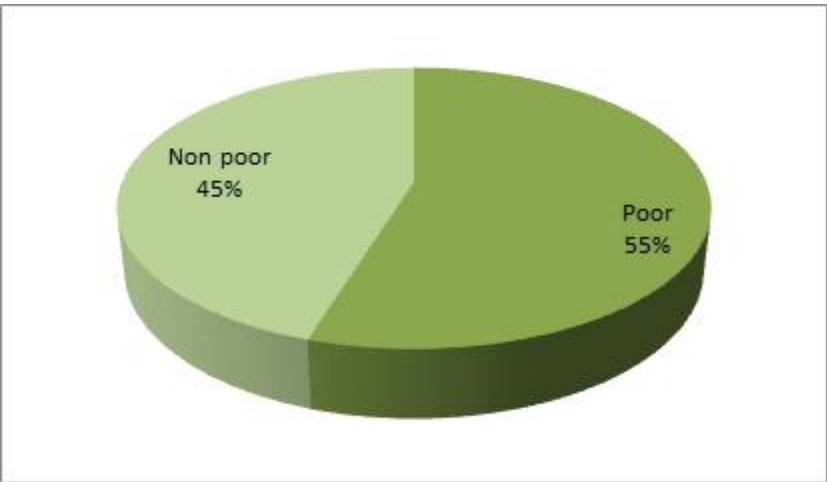


Figure 3. Poverty situation in the study area.

Determinants of Poverty in the East Gonja District

Probit analysis

Religion, land ownership, cultivated land area, monthly income and access to urban market were the significant factors determining household head social economic status in study area (see Table 3). All variables influence social economic status positively. Household heads that were Christian were more likely to be non-poor than those that were Muslim. This finding is consistent with the work of Achia, Wangombe &

Khadioli (2010) who found that in Ghana household heads that were more likely to be poor were non-Christian. Land ownership also significantly explains social economic status at the 10 percent level. This means that household heads who do not own land were more likely to be poor as compared to those that own land. Ngunyi et al. (2015) also found a positive significant effect between land ownership and per capita consumption. The area of land cultivated strongly explained household heads, social economic status in the study area. The relationship is positive and significant at the 1 percent level. Similarly, households with higher monthly income were more likely to be non-poor than households with lower monthly income. Finally, access to an urban market was found to have a significant positive relationship with social economic status. This implies that household heads who have access to an urban market were probably more likely to be non-poor compare to those without access.

Table 3.

Determinants of Poverty

Variable	Coefficient	Std error	P > z
Constant	-3.6222	0.7564	0.000
Age	-0.0085	0.0085	0.318
Religion			
Christianity	0.6302	0.2663	0.018**
Traditionalist	0.2657	0.3083	0.389
Land ownership	0.5156	0.3041	0.090*
Area of land cultivated	0.1374	0.3254	0.000***
Number of livestock	-0.0382	0.1033	0.712
Monthly income	0.0168	0.0024	0.000***
Distance to water source	-0.0002	0.0003	0.357
Number of persons in room	-0.0350	0.0473	0.459
Access to urban market	1.1516	0.2792	0.000***
Household savings	0.3970	0.3024	0.189
Number of observations = 270		Prob>chi2 = 0.0000	
LR chi2 = 188.93		Pseudo R ² =0.5113	

Source. Own calculations.

Housing condition as a measure of poverty in the study area

The majority (95.5 percent) of the respondents were living in houses built with mud and 4.5 percent of the houses in the study area were built with sandcrete. About 65.8 percent of the houses were thatched and 34.2 percent were roofed with corrugated galvanized iron. The fact that majority of the houses were roofed with thatch is a good indicator of the area's poverty. The perceptions of the household heads toward the condition of their houses were also examined. About 31.3 percent perceived their houses to be in good condition while more than 50 percent indicated that their housing condition was fair. Only 6.1 percent thought that the conditions of their houses were bad and 7.7 percent did not want to discuss their housing condition.

Source of water as determinant of poverty

Having limited access to basic social amenities like running water, sanitation on site, grid electricity and health care services is an impediment to escaping poverty (Yusuf 2010). The bar chart below presents the sources of water for the inhabitants of East Gonja. As shown in the bar chart, 55.8 percent of the household heads obtained their water for domestic use from boreholes. About 38.06 percent of household heads reported that their source of water is from a dam. Also, 1.3 percent of household heads said that their water for domestic use was coming from the river, while 4.8 percent obtained household water from a hand dug well. The predominance of borehole water means that many of the inhabitants in the area have access to safe drinking water. However, it is important to note that most of these boreholes dry-up during the dry season. Regarding the walking distance to the source of water supply, a minimum average distance of around 475 meters was recorded. This represents considerable time consumed for those responsible for collecting water for the household. In northern Ghana, this means women and girls. This distance to source of water may have a negative

economic effect, as it represents considerable unpaid work.

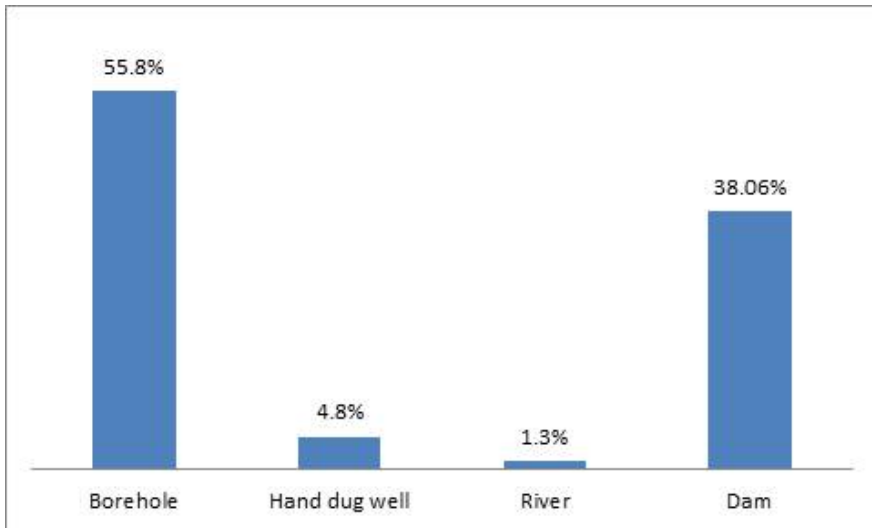


Figure 4. Source of water.

Access to health care

The results relating to access to health care are shown in Table 4. The majority (72.6 percent) seek medical attention outside their community of residence. Less than 30 percent seek medical attention within their community. This is an indication that many of the communities in the study area do not have sufficient medical facilities to meet household needs. This can have serious implications on maternal health as many of the roads are not very accessible, especially during the rainy season. This can increase the maternal mortality rate in the district as one of the causes of maternal mortality is the delay in getting to a health facility. The minimum time it takes to get to a health facility is about 1 hour 26 minutes. This can cause fatalities in the case of emergencies

Table 4.
Access to Health Care

Access to healthcare	Frequency	Percentage
Facility within community	71	22.9
Facility at nearby community	225	72.6
Facility outside the district	1	0.3
Traditionalist	1	0.3
Undisclosed	12	3.9
Average time	1 hour 26 minutes	
Average distance to health centre	17km	

Access to education

More than half (56.8 percent) of the respondents reported that their children attend school outside the community. Only 31.3 percent reported that their children were attending school in the community. This shows that majority of the study communities do not have a school, and children must travel to access their educational needs. This may have a negative effect on the educational performance of the children as the distance to school is an important factor for achievement and ability to complete basic education. 11.9 percent of respondents indicated that their children were not in school. Household heads who reported that children had dropped-out of school did not attribute this to the absence of schools in the communities. Rather, they reported factors such as inability to afford school fees, girls becoming pregnant, children not able to cope with school and girls being given out for marriage.

Conclusion

The study uses the probit regression model to identify the determinants of poverty in the East Gonja district using cross-sectional data from 310 household heads. This model was used because of the mutually exclusive nature of the dependent variable. It also allows for the assessment of how each independent variable affects the probability of

being poor or non-poor. From the analysis of the data, 55 percent of the household heads were poor as they were living below the lower poverty line of GHS 792.00 per year. About 45 percent were considered non-poor as they were spending above the lower poverty line. The probit analysis showed that variables such as religion, land ownership, cultivated land area, monthly income and access to urban markets were the significant variables influencing household's social economic status in the East Gonja district. The fact that many of the houses were built with mud and roofed with thatch is an indicative of wide spread poverty in the district. Though households in the district have access to boreholes which is considered as safe drinking water supply, most of these water sources dried up during the dry season and were also located a considerable distance from dwellings. Many of the communities do not have adequate health facilities, and households travel to nearby communities or the district capital for their health needs. Considering education in relation to poverty, the result has shown that majority of the communities do not have educational facilities. Children of these communities have to travel to other communities to access basic education in the district.

Certain policy implications derive from the study. Market access has a positive relationship with the socio-economic status of the household heads. The implication of this is that policies should be geared towards opening up of markets to rural households. The fact that households have to travel some distance for water and the fact that most of these boreholes dried up during the dry season has a negative economic effect on the households, especially women. Efforts should be made to reduce the distance travelled in search of water for household use.

The paper has demonstrated that poverty based on two or more severe deprivations varies remarkably from using a single income poverty measure. Poverty is not only dependent on earning a certain level of household income; it is also about access to health, education and so forth. Helping families move out of poverty means moving beyond solely increasing incomes to aiming for greater social investment in

general. Policy design and implementation are key factors in ensuring that households benefit from policies aimed at poverty reduction. National priorities need to reflect strong linkages between these policies and poverty reduction at the household level, as well as monitoring of progress and impact. Social protection measures are increasingly gaining recognition as successful tools in reducing poverty as these measures commonly address social vulnerability and take into account the interdependent relationship between exclusion and poverty.

This paper also opens up opportunities for further studies, with the primary hypothesis that measuring poverty using the multidimensional approach are more accurate and may lead to the implementation of holistic policies that address the multidimensionality of poverty at the household level. This means that if we want to reduce poverty in the district we need to look at policies that address access to low cost basic health care services within communities, expanded educational infrastructure and access to education, accessibility to markets, safe water supply source and affordable low cost housing. All of these factors indicated that poverty is pervasive in the East Gonja district.

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