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The Ghana School Feeding Program: Factors Affecting Enrolment of Pupils in Garu-Tempane District, Upper East Region

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Abstract:
The socioeconomic situation of the country has prompted policy actions from Government of Ghana since 2005 to start the Ghana School Feeding Program (GSFP) to improve enrolment among pupils in public primary schools. The study used a district-level data (2008-2012) to examine socioeconomic factors affecting enrolment of pupils in food insecure district of Garu-Tempane District, Upper East Region. A quasi-experimental design was used in selecting 360 pupils both from participating and non-participating public primary schools with similar socioeconomic characteristics. Frequency, counts, percentages and Pearson Product Moment Correlation (PPMC) statistics were used in analyzing the data. Finding shows that the GSFP succeeded in increasing the gross enrolment among participating schools as compared to a decreased in non-participating schools. In addition, PPMC coefficients for socioeconomic variables and enrolment results showed positive and slight significant correlation ($p<0.05$) with age, AG ($r = -0.234$) meaning that the higher the age of pupil the less chance for the enrolment of that pupil. The findings have implication for access to primary education particularly Garu-Tempane District. The study therefore recommended that the school feeding programs' sustainability should be well-targeted not only on the basis of food insecurity but through a more rigorous in-depth socioeconomic survey and vulnerability mapping with a view to scaling-up of the program in food deficit areas to incorporate more schools.

Keywords: *Socioeconomic factors, enrolment, school feeding program, Ghana*

1. Introduction

In recent past during the economic down turn in Ghana, low enrolments and high drop-outs in schools were the order of the day which characterized the primary education system in Ghana. The high incidence of poverty coupled with sociocultural factors worked against enrolment of pupils in schools. Parents or guardians found it difficult to invest in the education of their children/wards particularly in payment of fees, feeding and purchase of school uniforms throughout the entire duration of schooling.

The Upper East Region especially Garu-Tempane is the poorest in Ghana and has been a long-standing recipient of food-aid (Roger, 2006). It has been the location of numerous development projects and is presently the site of considerable economic deprivation as a large number of people migrate southwards in search of employment opportunities (Peprah and Muruka, 2010). Being the poorest in Ghana was where poverty reduction efforts have failed to yield positive results (Jonah, 2003). Food-insecure households do not consume an adequate diet to maintain a healthy life. The rate of food insecure households is above 20 per cent (The Daily Dispatch, 2013). Indeed, the largest proportions of peasants who cultivate two hectares or less and are asset poor are in this region. Also, vulnerable to food-insecurity are households with low level of education. Experiencing low rainfalls, perhaps the lowest in the country, combined with depleted soils has produced in the region the worst-case poverty scenario. Moreover, it was observed that the enrolment of pupils was also worst-off. This paint a gloomy picture when viewed against access to education of poor household's children in the area.

To stem the tide in low enrolment in primary schools among vulnerable children in public primary schools, the Government of Ghana embarked on a number of policies and programs at the basic level. Key among them are: educational reforms in 1987 and 2007; Free Compulsory Universal Basic Education (FCUBE); improving the quality of teacher training and education delivery; and the Ghana School Feeding Program (GSFP). The Ghana School Feeding Program which has lately received renewed attention as a policy instrument was introduced as a pilot project in September, 2005, aimed at providing one nutritious meal prepared from available local food crops for pupils in public primary schools from Mondays to Fridays in disadvantaged communities. This pilot phase was initiated in 10 selected schools across the 10 Regions in Ghana. By 2008, it has incorporated 170 districts and by 2011 it had covered 713,590 children in targeted schools across the entire country (GoG, 2006). The program was part of Ghana's efforts of attaining the UN-

MDGs on extreme hunger and poverty as well as achieving universal access to primary education; and reducing under-five mortality rate by 2015. It was hoped that it could rapidly increase enrolment in selected schools across the country.

In Ghana, formal education remains the core pillar of human development with 18,579 primary schools nationwide (GoG, 2010). Consistent with national data, the average size of primary school class is small, at 35 pupils on the average per school (GoG, 2008). As such, basic education has become a right, mandatory and free for all pupils following the introduction of Free Compulsory and Universal Basic Education (FCUBE) and the Capitation Grant to promote and increase enrolments in all basic schools in the country. This culminated into a dramatic increase in the number of kindergartens and primary schools across the country to accommodate the increasing numbers (GoG, 2008 and SNV-Ghana, 2006).

Prior to now, there had not been any form of evaluation of the GSFP to ascertain the effect or otherwise of the program on the targeted beneficiaries in the District. Hence, it became necessary to assess the feeding program which has ran since 2005 to date with a view to isolating its effect on enrolment of pupils in participating public primary schools. It is against this backdrop that the study intends to find answers to the following research questions:

1. What are the pupil's/parent's/guardian's socioeconomic characteristics?
2. Does the school feeding increase enrolment of pupils in schools?
3. What specific socioeconomic variables affect enrolment of pupils in schools?

2. Methodology

2.1. Study Design

Due to the absence of baseline data from the GSFP, the study used randomized design to obtain credible and transparent estimates of program impact that overcome the problems often encountered when using other evaluation practices (Duflo, 2004). The quasi-experimental design in which experimental and control groups are selected after the intervention has taken place was used in order to obtain comparative information using school feeding program participating pupils that have been exposed to the feeding program and non-participating school pupils that have not been exposed to the feeding program. This was to establish the effect of the school feeding program and eliminating selection bias in the study. This assertion was supported by Amit Dar and Gill (1998) who also used the design. In essence, according to Duflo (op cit), comparing the same individual over time will not, in most cases, provide a reliable estimate of the impact the program had on him or her, because many other things may have changed at the same time that the feeding program was introduced. The problem of counterfactual was overcome by using comparison group. Hence, the question of who benefited or not is difficult at any point in time since an individual is observed to be exposed to the program or not. We therefore cannot seek to obtain an estimate of the impact of the school feeding program on each pupil. All we could hope for was to obtained the average impact of the feeding program on a group of pupils who participated by comparing them with a similar group that was not exposed to it. The critical objective of impact evaluation is to establish a credible comparison group, that is, a group of individuals who, in the absence of the feeding program, would have had outcomes similar to those who were exposed to the program (participants). The non- participating group gives an idea of what would have happened to the participating group if it had not been exposed, and thus provides an estimate of the average impact on the participants (Oloruntoba, 2000).

2.2. Study Location

Garu-Tempane District lies between latitude $10^0\ 38^{1N}$ and 11^{0N} and longitude $0^0\ 06^{1E}$ and $0^0\ 23^{1E}$ in the South-Eastern corner of the Upper East Region of Ghana with Garu as the capital. It shares boundaries with Bawku Municipal to the North; Bunkpurugu-Yunyoo District to the South; Bawku West District to the West; and the Republic of Togo to the East. The district has an area of 1,230 square kilometres and a population density of 99 persons per square kilometres. Consequently, this geographical location puts it at a disadvantage as it is far removed from the regional and other district capitals.

2.3. Study Population

The study population (N) comprised of all pupils, parents and headteachers / class teachers in all public basic schools across Garu-Tempane District. Classes four, five and six Pupils were purposively selected as samples for study due to the fact that these pupils were more matured and would be able to respond to the questionnaire. Moreover, these pupils would be most likely to have participated in the school feeding program for at least three years. The study assumed that a minimum of three years participation in the program was adequate to establish the effect of GSFP on the pupils in the study area. The teacher-pupil ratio in a class at the basic level was 1:89 (http://www.ghanadistricts.com/districts/?r=8&_=188&sa=5572, accessed on June 08, 2012).

2.4. Sampling Procedure and Sample Size

A total sample size (n) of 360 pupils, made up of (180 participants and 180 non- participants**)** was selected for the study based on Krejcie and Morgan Table (1970) for determining sample sizes. The study employed simple random, stratified and purposive sampling techniques in selecting the sample for the study.

In selecting the circuits for the study, simple random sampling technique was adopted to select six circuits out of eleven circuits namely; Garu East, Garu West, Wuriyanga, Kpikpira, Tempane and Worikambo Circuits. In each circuit, purposive sampling technique was employed to select the participating schools, whiles the non-participating schools were randomly selected through

randomized pairing with the participating schools, subject to having similar attributes which included homogeneity factor to minimize biases in sampling.
In each school (participating schools and non- participating schools), lists of classes four, five and six were obtained from the Class Registers' to constitute the pupils` sample frame. Simple random sampling technique was used to select 10 pupils each from a class. Headteachers / Class Teachers from each school (participating schools and non- participating schools) were also purposively selected for the study. However, parents of each index pupil provided data on parental/guardian socioeconomic characteristics.

2.5. Method of Data Collection and Analyzes
Both primary and secondary data were used for the study. Primary data was obtained using the questionnaire to solicit data from the respondents including the pupils, parents, teachers, while secondary data was obtained from the GSFP District Secretariat, Ghana Education Service and Ghana Health Service. Structured questionnaire and an interview guide were used to collect primary data from the respondents. The instruments were subjected to face and content validity by experts in development communication. For reliability of the instrument, a test-retest method was used on similar respondents at an interval of two weeks at a location outside the study area. A high Cronbach Alpha Coefficient (r=0.72) was obtained which indicated that the instrument was reliable enough to be used.
Data was analyzed using the Statistical Package for Social Sciences (SPSS) 16.0 Edition for Windows. Descriptive statistics such as frequencies, counts, percentages and correlation were used in analyzing data with decision taken a *priori at 5%* level of significant.

3. Results and Discussion

3.1. Pupils'/Parental / Guardian Socioeconomic Characteristics
Pupils/parents/guardians were major stakeholders in primary education; hence, their socioeconomic characteristics are important.

3.1.1. Sex of Pupils
Findings show that more than half of the participants and non-participants are boys (55.6 % and 51. 7% respectively) and less than half are girls (44.4% and 48.3% respectively). This male-dominance was noted by UNESCO (2012) which affirmed that gender disparity still exist among pupils despite the effort to bridge the gap between boys and girls in access to primary schooling in Northern Ghana.

3.1.2 Age
According to GoG (2010), the general schooling age for pupils was 4 -14 years. Findings revealed that for participating schools, the mean age by sex was 12.8 for girls and 13.4 for boys. The age range was 11-15 years. For non-participating schools, the mean age by sex was 12.7 for girls and 13.6 for boys. The age range was also 11-15 years.

3.1.3. Religion / Type of Marriage of Parents/Guardians
In most part of Northern Ghana, Muslim religion pre-dominates. Findings showed that for participating pupils by sex, more than half of the parents/guardians (59.5% girls 54.5% boys) and non-participants (57.0% girls and 52.9% boys) are Muslims. By extension, the parents/guardians religion automatically becomes that of the pupils. This signifies the presence of Islam in the study area.
In terms of marriage, findings by sex of pupils also reveal that polygamy was still being practiced by most of the parents/guardians. Parents/guardians of pupils in participating schools (67.1% girls and 67.7% boys) and non-participating (63.6% girls and 63.2% boys) were polygamous.

3.1.4. Type of Domicile / Dwelling
The findings also showed that majority of the pupils' parents/guardians (73.4% and 77.8% participants, and 81.7% and 86.2% non-participants) reside in the rural communities. Using the pattern of housing as a proxy for the indication of poverty, one-third of pupils (31.6%girls and 33.3% boys) participants, and (26.9% girls and 28.7% boys) non-participants resided in dwelling constructed with mud and thatched roof, while more than half (55.7% girls and 59.6% boys) participants, and (64.5% girls and 69.0% boys) non-participants resided in dwellings constructed with mud and zinc roof. The implication of this finding signifies the presence of poverty among the parents/guardians. Empirical evidence shows that despite the significant decline in poverty at the national level, the northern regions still have the highest poverty rates, particularly in the rural areas (GoG and UNDP, 2010, and World Bank, 2004).

3.1.5. Occupation and Educational Levels of Parents/Guardians
Findings show that farming is the main occupation of the parents/guardians. Majority of parents/guardians (74.7% girls and 83.8% boys) participants, and (72.0% girls and 79.3% boys) non-participants) are farmers. The implication is that pupils were likely to be absent from school to work on the farms.
Generally, the literacy level of parents/guardians is low. Findings show that most parents/guardians (60.8% girls and 65.7% boys) participants, and (63.4% girls and 62.1% boys) non-participants) have no education. This confirms the assertion made by *de* Lange, (2007) that the high level of illiteracy among parents/guardians was due to the deliberate policy of building a crop of labor force in the north as migrant farmers in the south by colonial masters.

3.2. Enrolment Rates in Participating and Non-Participating Schools

Table 1 presents the enrolment rates in selected schools from 2008-2012. Findings show that the GSFP succeeded in increasing the gross enrolment rate by 24% among participating schools but decreased by 7% in non-participating schools. The result tallied with that of Ahmed and del Ninno (2002), Ahmed *et al.* (2007), Kazianga *et al.* (2012), Gelli *et al.* (2007) and SNV-Ghana (2008) who found that enrolment increased significantly in participating schools compared to non-participating schools. It was also noted that boys' (51.3%) enrolment was higher than girls (48.7%) in participating schools. Enrolment rate was also lower for girls (46.9%) than boys (53.1%) in non- participating schools. With these findings, the policy of bridging the gender gap in access to primary education by 2015 was being threatened. Therefore concerted effort should be made on enrolment of girls. The assertion was supported by UNESCO (2012).

	Participating School				**Non-Participating School**			
	Girls		**Boys**		**Girls**		**Boys**	
2012	1200	(49.3)	1236	(50.7)	917	(45.9)	1079	(54.1)
2011	1119	(49.3)	1153	(50.7)	939	(46.5)	1081	(53.5)
2010	1109	(49.7)	1124	(50.3)	959	(46.8)	1088	(53.2)
2009	1016	(48.3)	1089	(51.7)	979	(47.2)	1095	(52.8)
2008	916	(46.5)	1053	(53.5)	1023	(47.8)	1118	(52.2)
Total	**5360**		**5655**		**4817**		**5461**	

Table 1: Enrolment rates in Participating and Non-Participating Schools (Last Five Years)
**Figures in Parentheses are in Percentages*

3.3. Correlation between Socioeconomic Characteristics and Pupils' Enrolments

Correlation coefficients for socioeconomic variables and enrolments are presented in Table 2 using Pearson Product Moment Correlation (PPMC). Of all the variables, enrolments showed positive and slight significant correlations ($p<0.05$) with age, AG ($r=-0.234$) meaning that the higher the age of pupil the less chance for the enrolment of that pupil. However, age, AG showed positive and high significant correlation ($p<0.01$) with number of dependants, ND ($r=0.280$). Similarly, number of dependent, ND showed positive and slight significant correlation ($p<0.05$) with type of residence, TR ($r=--0.176$),; religion of parents, RP showed positive and slight significant correlation ($p<0.05$) with number of dependent ($r=0.169$) and also with type of residence / domicile, TR ($r=0.192$). Furthermore, type of residence, TR showed positive and high significant correlation ($p<.0.01$) with type of dwelling, TD ($r=0.392$). Finally, type of residence showed positive and high significant correlation ($p<0.01$) with highest qualification of parents, HQ ($r=--0.220$); and occupation of parents / guardian, OP ($r=0.221$)

Characteristics	**EN**	**AG**	**TM**	**RP**	**ND**	**TR**	**TD**	**OP**	**HQ**
EN	-								
AG	-0.234*	-							
TM	0.026	0.056	-						
RP	0.144	0.064	0.023	-					
ND	0.130	0.280**	0.049	0.169*	-				
TR	0.034	-0.007	0.136	-0.192*	-0.176*	-			
TD	-0.223	-0.105	0.076	-0.135	-0.036	0.392**	-		
OP	-0.121	0.005	0.005	-0.125	-0.039	-0.133	-0.005	-	
HQ	0.175	0.095	-0.041	0.086	-0.002	-0.220**	-0.049	0.221**	-

Table 2: Correlation Coefficients between Socioeconomic Characteristics and Pupils' Enrolments
**Significant @ 0.05 level, **Significant @ 0.01 level*

Legend:

1. EN: Enrolments
2. AG: Age (years)
3. TM: Type of marriage
4. RP: Religion of parent/guardian
5. ND: Number of dependent
6. TR: Type of residence/domicile
7. TD: Type of dwelling
8. OP: Occupation of parent/guardian
9. HQ: Highest qualification of parent/guardian

4. Conclusion and Recommendations

The study concluded that the Ghana School Feeding Program is an appropriate and auspicious policy whose objectives are of direct relevance to the country's mandate of increasing access to primary education and reduction in poverty. On the part of

parents'/guardians' socioeconomic characteristics as factors affecting enrolment in schools, the study concluded that some selected socioeconomic variables were positive significant factors influencing enrolment of pupils in participating schools. However, if access to primary education is to continue to be seen as a key driver of poverty and increased food production, the school feeding programs' sustainability should be well-targeted not only on the basis of food insecurity but through a more rigorous in-depth socioeconomic survey and vulnerability mapping with a view to scaling-up of the program in food deficit areas to incorporate more schools. It is also recommended that there is an urgent need to partner with Non-Governmental Organizations as well as the private sector in order to foster strong commitment to the program.

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